

MESG
MESTRADO EM ENGENHARIA
DE SERVIÇOS E GESTÃO

Enhancing User Experience for Mobile Applications
- a case study of a Retail Company

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Master's Dissertation

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2015-07-01

"Design is not just what it looks like and feels like. Design is how it works."

Steve Jobs

Resumo

Nos negócios, em casa ou em qualquer outro lugar, a mobilidade alterou a forma como vivemos, trabalhamos, e até mesmo nos entretemos. Quem entre nós nunca se dirigiu a um lugar sem saber a sua localização? Contamos sempre com o nosso *smart phone* para obter rapidamente uma resposta. Ou quando estamos perante um marco importante, pegamos no nosso dispositivo móvel para registar o momento, podendo até mesmo partilhar o momento quase que instantaneamente numa rede social.

Na última década, a maioria das empresas têm optado por uma abordagem "preparar, apontar, disparar" no que toca ao ataque ao mercado móvel. Estes esforços tendem a ser estratégicos, e em resposta à proliferação rápida dos dispositivos e aplicações móveis. É notório que as empresas começam a investir o seu tempo e recursos necessários para reestruturar e transformar a sua estratégia na área das tecnologias móveis.

Este desafio surge como uma oportunidade para estabelecer uma nova ideologia estratégica, com base em estudos realizados com clientes na aplicação móvel do Continente e com a intenção de implementar regras que aumentem de uma forma simples e homogénea a experiência do utilizador quando utiliza qualquer aplicação móvel Sonae MC.

É inegável que as tecnologias móveis estão cada vez mais em foco. O mundo do "mobile" está aqui para ficar e a verdade é que só agora começamos realmente a explorar todo o seu potencial. Verdadeiramente, nesta área de negócio não existe uma resposta absoluta, e a resposta que se obtém pode não se aplicar a cada caso de uso. Para complicar ainda mais as coisas, o que pode estar certo hoje pode precisar ser alterado amanhã, e o que poderá ser certo amanhã pode eventualmente precisar de ser alterado no futuro. Sendo assim, é de uma importância vital definir uma estratégia que permite colmatar as necessidades de hoje e ser suficientemente flexível para suportar as necessidades do amanhã.

Abstract

In business, at home or anywhere, mobility has altered the way we live, work, and play. Who among us hasn't headed to a place without knowing its location? We rely on our smartphone to quickly get the answer. Or when we capture a milestone, we grab our mobile device, record the moment and we can even share the moment almost instantly.

For the past decade, most companies took a "ready, fire, aim" approach to the mobile market. These efforts tended to be strategic, coming in response to the fast proliferating of mobile devices and applications. However, companies are investing the time and resources necessary to redefine a mobile strategy that enables them to transform themselves.

This challenge comes as an opportunity to establish a new strategic ideology, based on studies conducted on Continente mobile application with real customers and with the intention to implement rules that will increase their user experience in an easier and homogeneous way throughout the usage of each Sonae Mc mobile application.

It is a fact, mobile is becoming core. Mobile is here to stay and truly we are only starting to tap into its potential. Bottom line there is no right answer, and the answer you chose may not apply to every use case. To further complicate things what might be right today may need to be changed for tomorrow, and what might be right tomorrow may need to be changed in the future. So it is vital to set a strategy that allows you to address your needs today and get as flexible enough to support your needs tomorrow.

Key words: User experience, Usability, Testing, Mobile, Requirements

Acknowledgments

First of all I would like to say thank you to the entire team at E-Commerce Sonae MC for the sensational work environment and for welcoming me with open arms. I would like to leave a special thank you to my company advisor Fernanda Vasconcelos, firstly for the great opportunity granted and for the joy with which guidance, support and teachings throughout the project were always provided, but also for my fully integrating on the mobility team projects.

I am truly thankful to my colleagues Sara Cunha, Regina Cerqueira, Márcia Carvalho, Renata Sousa for the experiences we exchange and for the friendship we accomplished. I am also deeply grateful to all my other colleagues for all the teachings and for the enjoyable working environment we had the opportunity to establish.

I am also extremely grateful to Professor Teresa Galvão for her confidence, motivation, and continuous support. This work truly benefited from all her teachings on the Human computer Interaction course and from our conversations about mobility and mobile applications. I extend my gratitude to all the Professors and to the board of the Master in Services Engineering and Management, and to all the people that helped me on my academic and personal growth.

To my family and to all my friends for being always present in the good and bad moment also a special thank you. However, words cannot describe how grateful I am especially to my parents and to my brother, for all the familiar atmosphere, support, and guidance and for always cheering me up when I need the most.

Pedro José Cardão Pinto

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Glossary

APP	Mobile Application
UX	User Experience
UI	User Interface
HCI	Human Computer Interaction
MHCI	Mobile Human Computer Interaction
ISO	International Organization for Standardization
POS	Point of sale
GPS	Global Positioning System

1 Introduction

High demand from users and the increase of fast resolution to their needs are driving a boom in mobile applications – but how can organizations take the best advantage of this in order to develop the APPs necessary to improve their efficiency and meet customer's requirements?

As the uptake of mobile applications grows, most organizations are putting mobile strategies in place. This evolution is giving them the chance to look into new additional revenue channels while they improve staff productivity, customer experience and satisfaction, such opportunities mean mobile applications simply cannot be ignored and are becoming more than a trend, they are becoming a transformation necessity. Mobile applications are the new reality of how our society is engaged, this already has changed many sectors of business, meaning pretty much everyone is up to grab this mobile opportunity.

Thus, in this context, the challenge of enhancing the User Experience for the mobile applications of the organization rises. This seeks to standardize the experience journey provided to the customer through all the length of mobile applications owned by the company. The benchmark analysis, literature review and the chosen methodology of testing with clients were vital to obtain the insight to approach and complete the task at hands.

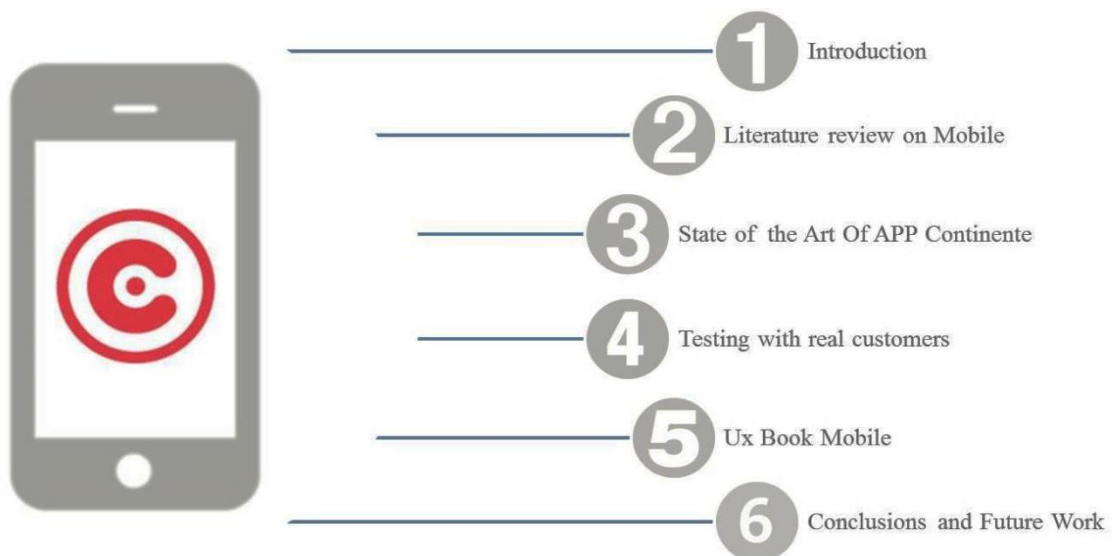


Figure 1 - Document's structure

The figure 1 above mirrors the structural approach of this document. The first chapter, Introduction contains a brief description of the business environment where this work was developed as well as a contextualization of the project and its goals.

The second chapter, Literature Review on Mobile, structures the insight needed in terms of research material about themes of interest for the conduction of this project. These subjects, manly related with mobile user experience and user interface, are of extremely importance to the work developed. Such as mobile requirements and mobile human-computer interaction and especially usability and usability testing.

On the third section, the theme of mobility in the company's environment is introduced, by doing an overall study on App *Continente*, the resource under study. The process was developed to understand and evaluate it, as well as the first steps towards APP's possible improvements and consequently the enhancement of the user experience for the APPs.

Chapter four is crucial for the success of the project, is where it is mirrored all the phases of the testing process with real users. It explains why the tests were conducted and the results obtained.

The final result, which is the enhancement of the user experience that will culminate on the normalization of an UX book, will be further explained on chapter 5. The information gathered, the results obtained and the possibility to use this research on all the APPs of the company is also explained in this chapter.

This is the structure that is held to report all the work done in a business environment at Sonae MC, under the Master in Services Engineering and Management of the Faculty of Engineering of Porto University.

1.1 Sonae's Empire

"Create economic and social value in the long run bringing the benefits of progress and innovation to an increasing number of people" is the mission behind Sonae's empire. Established in 1959, had its primary business in the producing of decorative wood, but from the early years it was well latent that innovation and expansion were aspects of its strategic business. The beginning of the 80's proved to be the starting point into Sonae's diversification of business, from a joint venture with Promodés resulted the great opening of the first hypermarket in Portugal, the well know *Continente* of Matosinhos.

Today, Sonae, with a range of forty thousand collaborators, is the biggest private company in Portugal and describes itself as a retail company acting in two major areas: food and specialized retail. A part from this it also has a strong force in the shopping centers business and telecom sector.

Its business are structured as presented in the following figure 2, where the core business is detained by the two most known sub-holdings, SonaeMC and SonaeSR, both operating in the retail sector. Sonae MC, the place where this project was held, is responsible for the food retail area. Currently is leading the food retail market in Portugal presenting its customers with a wide range of services spread across innumerable brands such as: *Continente* (hypermarkets) , *Modelo* (supermarkets), *Bom Bocado* (coffee shop/ restaurant), *Well's* (health care) and *Note!* (book shop).

The related business is represented by SonaeRP and SonaeIM, the first manages retail properties and the second, manages investments. Finally, core partnerships are represented Sonae Sierra and NOS, acting respectively in shopping centers and telecom business.

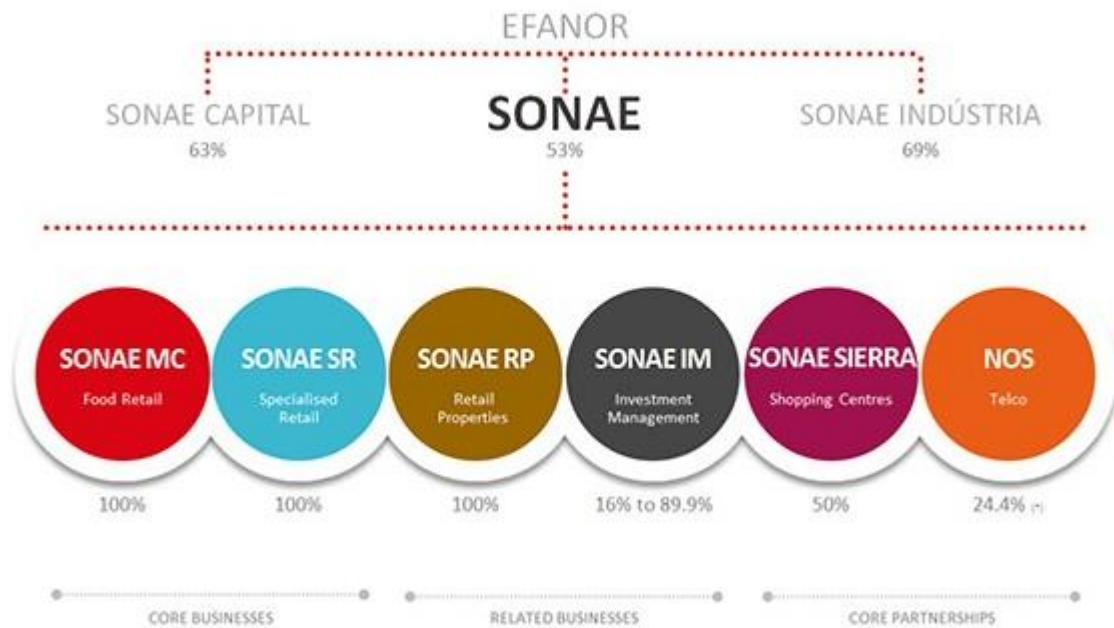


Figure 2 – Sonae's areas of business

Innovation in the service sustainability is a priority for Sonae, through promoting the creativity, the ability to cultivate a strong appetite for change, dynamism and the capabilities of its collaborators. The results are very positive, since many of the innovations implemented have an important impact on the organization, both financially and socially, and have been recognized through the winning of many national and international awards.

1.2 Project Contextualization and Goals

In a time like today, where mobility achieved worldwide levels with people permanently interacting with mobile devices anytime and anywhere, more and more companies are starting to focus their vision on mobile and its potential. Enhancing customer experience amongst all its channels it's a great challenge and one of Sonae's major concerns for the near future. Worried with its customer journey experience and satisfaction, and wanting to always be on the forefront of customer value provision, Sonae MC is attacking the mobile market with strength, expressing the need to normalize the development of its mobile applications in terms of usability design and user experience. This practical work is the answer to resolve this particular requirement.

Sonae MC is already one of the leading companies in the world of mobile with already ten applications developed. Having a strategy for the mobile ensures the maintenance in the market's leadership position, which it already occupies. Future plans include the launch of new APPs and also the restructure of some of the existing APPs.

In order to accomplish the enhancement of the user experience of the company APPs, an UX Book of Sonae MC mobile applications rules, using as basis the tests conducted on APP *Continente* is to be developed. This UX Book should also take under consideration the leading international trends of APP design, mainly established by companies like Apple and Google.

Thus, making an exhaustive survey of user experience rules is one of the main goals of this thesis. This survey aims to be applied, not only in the APPs that are already developed but also in the ones to come, so that it will be possible to provide the customers with the best experience in a multichannel environment.

Consequently, in order to achieve this, an approach was established by an extensive analysis of the application *Continente*, the core APP of the organization, followed by wide benchmark research. These two analysis, combined, led to the rise of the requirements and to a list of alternatives that will be prototyped and, then, tested with real users in a controlled environment.

The topics to be addressed in UX Book will be as diverse as, for instance, the shape and colors of the buttons, the rules for filling mobile forms and the best practices of sharing content in social networks. It will also address all the aspects that might impact the experience of using the company APPs, which is the main goal of this practical research.

2 Literature review on Mobile

It's practically mandatory to say that the so fashionable mobile devices and mobile applications came to conquer and they did it strongly. We live in a mobile era, where companies try to take advantage of the immense potential of mobile devices to provide users with tools for a huge range of day-to-day activities. There are mobile applications for almost everything. From shopping, to games, from the possibility to obtain directions, to APPs used as sports assistant, even to monitor health conditions, and, of course, to send text messages and phone calls, the intrinsic mobile actions that nowadays were set a part to the background, and that for some even came to disuse. For many, the mobility characteristics and the funny moments it offers becomes a basic necessity, something that people cannot live without.

This chapter covers an essential literature review on themes related to mobile, such as, User Experience, User Interface, Mobile requirements and Mobile Human Computer Interaction. Finally, it ends with some notions about Usability and Usability testing that links all the areas presented and establishes the bridge that can be connected to the practical part of the work developed.

2.1 Mobile User Experience

Throughout the past decade, smartphones and mobile applications have become one of the most, if not the most popular kind of services provided. But to achieve this popularity the mobile business has to deal with challenges of increasing functionality requirements of the users as well as their request for high quality. In order to persevere in the extremely competitive market store, mobile development companies not only should satisfy the requirements of users but also provide a so called: satisfying user experience (Tan, Rönkkö, & Gencel, 2013). However, achieving this is not so simple since you have to take into consideration many aspects, such as the ones shown in the figure 3, which might influence the user's perception of a good experience.



Figure 3 – Elements of mobile User Experience

Companies are constantly searching for a wider range of knowledge and to understand the consumer's usage behaviors as a starting point to developing new technologies and services. This is indeed the case of User Experience, once defined by the ISO standard 9241-210 as "a person's perceptions and responses that result from the use or anticipated use of a product, system or service" (ISO 9241-210, 2008).

UX highlights non-function aspects like interactions, shifting the focus to user touch and perception. Since UX is subjective and focuses on the user interaction, it may not matter how good a product is objectively, its quality should be acknowledged subjectively in order to have an impact. Consequently, several aspects can influence how people perceive quality during the interaction with the product (Tan, Rönkkö, & Gencel, 2013). The user experience is the personal mental impressions and perceptions, so it is instable, subjective, complex, and hard to comprehend (Chen & Zhu, 2011).

Therefore, in order to provide a good user experience, user satisfaction and ultimately to lead to a product success, it is crucial that the user has a positive emotional reaction to the experiences delivered. However, the path from emotional experiences to product evaluation may not be direct, as emotions fluctuate over time, and some experiences are easier to recall than others. So it is vital to understand how emotions and memories are related to the overall evaluation of a product in terms of usability, behavioral intentions and, most of all, in terms of user experience.

It's well known that both emotions and how people remember them have a strong unique role in the appreciation of a product. In the early stages of use this might be overestimated but, after, in a second or third stage, positive emotions are mostly related to good user experience. This means that if you obtain a good experience, not only you will recall it, as well as you will try to achieve it once again, which increases positive emotions importance over time (Kujala & Miron-Shatz, 2013).

However, the way people consume and use mobile applications as a product differ in many ways. Nowadays, people interact with different devices and screen sizes, as well as even holding the smartphone with different hands, and interact with different fingers.

As Kuusinen and Mikkonen(2014) appointed, the way people interact with mobile devices powers APPs to have a special domain for designing UX (Kuusinen & Mikkonen, 2014), the time users interact with an APP is substantially shorter, therefore the users want to perform fast and focused actions instead of long-lasting sessions. In other words, actions should be simple yet focused, and they should be accomplished with easiness, using only a minimal number of finger presses or keystrokes. This is very important, since these actions are often executed while the user is performing daily life actions such as walking, running, and even driving a car or any other kind of activities that might be distracting (Kuusinen & Mikkonen, 2013). At the same time, the new larger screens presented nowadays led to platform specific restrictions and guidelines regarding how UX should be addressed in devices with this characteristics (Kuusinen & Mikkonen, 2014).

In real life, the connection between a user and a product is enhanced over months or even years. Users have a substantial amount of emotional experiences with a product – both positive and negative – and emotions may change from day to day, from minute to minute and from the initial learning and eagerness of trying something new, to the part that it becomes part of the quotidian. When establishing an overall experience of interaction with a product, people do not purely tap into the emotional experience at the moment. Rather, they base their overall evaluation on the long time user experience stored in their memory, that is what makes

people to continue to use a product and even recommend it to others users (Kujala & Miron-Shatz, 2013; Kujala, Roto, Väänänen-Vainio-Mattila, Karapanos, & Sinnelä, 2011).

2.2 User interface Design trends and mobile requirements

Designing user's expectations is quite a challenging job. Users that are different from each other, consequently have different usability requirements basis. That can be based on, for instance, their needs, age and experience. This makes it very stimulating to gather and implement the diverse nature of expectations against different users.

That's why user interface and requirements must be approached with precaution and that's why UI as the main interaction hub in mobile environments attracts plenty of attention. The success or disaster of an APP is often related to its user interface, especially because users often demand the same user experience on different platforms.

Some basic usability requirements like trying to avoid too much keyboard inputs, interaction with menus, provide feedback, allow rollback options and give helpful hints, use adequate icons and language, are some key factors that should be taken under consideration and that might help improving the quality of the mobile application developed.

Nowadays mobile device leaders, such as Apple and Google have been reinforcing themselves in the market, establishing a set of well know requirements that have been seen by minor players as global trend.

Apple introduced the Apple iOS Human Interface Guidelines (Apple Inc., 2015), where it shows the iOS platform characteristics that should be taken under consideration throughout an application development process, such as: UI Design basics like navigation, feedback, animation, layout, icons and colors. Also, design strategies based on principles like aesthetic, consistency, interaction with Multi-Touch screen and user control and freedom, all the iOS Technologies like notifications, multitasking, iCloud or apple pay, Device orientation changes and Gestures such as tap, flick, and pinch, UI elements, icons and image design. In addition to this, Apple review the applications submitted for the App Store based on these characteristics they established. Thus, when someone is developing for iOS and wants to add the APP to the App Store, all of these characteristics should be taken under consideration.

Similarly to Apple, Google has developed Android user interface guidelines, as known as material design, which is also a visual language that combines classic principles of good design with the innovation of new technologies in order to try to develop a unified experience across platforms and devices. This support guides developers to take under consideration characteristics such as: touch gestures, size, design and location of icons, buttons and all design components, contextual menus, simplicity, size, and format of text, as well as certain aspects of usability. These guidelines also explain how these characteristics should be considered during the development and testing of Android applications (Google Inc., 2015).

By making an analysis of the Android and iOS design guidelines, it becomes perfectly clear the identification of the user interface elements which are core characteristic for the current generation of mobile applications and that are essential for usability evaluation. These so called requirements for a user-friendly design of mobile applications outcome from usability theories and user interface guidelines (Wich & Kramer, 2015). Therefore, is imperative to clarify the requirements for the user interface design of mobile applications. Requirements such as the following:

2.2.1 *Navigation and Information Architecture*

This deals with how a mobile application should be structured in terms of information and with how the screens of the application should be displayed to create a pleasant user experience. The application has to be designed so that the user can get the required information with minimal effort. To reach this, the navigation concept has to be intuitive, the differences between navigation and content elements have to be clear and the information has to be presented in a way that supports recognition rather than recalling. Also, the user should always be able to undo the last steps (Nielsen & Budiu, 2012) .

2.2.2 *Language and text*

The way words are put to use in an APP are another critical part of the design requirements, since the majority of the communication in an APP occurs via texts, the way you carefully choose what is to say and how, may have an impact in the image of the brand and what the company plans to provide to its users. Therefore, the text used in a mobile application should be clear, concise, familiar to the target users and, obviously, well written in terms of orthography and grammar. The text should always be used to provide the users with critical and helpful information (Wich & Kramer, 2015).

2.2.3 *Interaction and system status*

These days and due to the technological advancements, mobile applications can make use of elaborate animations and transitions. Still, they should only be used to support the user's interaction with the device. The same principle should be applied to the utilization of gestures. These, should be clear, easy to learn and intuitive to use. Besides this, the user should always be informed on what he is conducting on the application: "do you really want to perform this action?" Also the option to cancel or to do a rollback on an action should always be given. This gives the user the feeling of staying in control through the usage of the application. Another component that should be addressed are messages that interrupt the normal interaction of the user with the app, like, for instance, notifications. They should be well considered before being used and, if used, communicate something that will actually offer value to the user, too much communication or communication that the user perceives as not important might lead the user to abandon the usage of the app (Apple Inc., 2015; Google Inc., 2015; Nielsen & Budiu, 2012).

2.2.4 *Layout Design and Aesthetics*

According to worldwide establishers, like Apple and Google, an APP will suffer a boost on its usability just by applying a powerfully aesthetic appearance. To create an aesthetic user interface, several requirements should be carefully taken under consideration.

To start with, the design should indicate signals of consistency and prioritize features that will enhanced the user's recognition instead of forcing recollection, and provide clear purpose and direction throughout the APP. Layout structure, in terms of components positioning, color scheme and APP navigation should be planned according to the context of the application and due to mobile devices characteristics, like display screens (Apple Inc., 2015).

The same happens with components such as the size of the images and, especially, with icons. “Icons are the visual expression of a brand’s products, services, and tools. Simple, bold and friendly” (Google Inc., 2015), they are a vital mean of communication, often used to present to the user the core idea and intent of a product or function.

But it has to be ensured that all the design components, like buttons, images and icons are easy to understand and interact, and that they will reflect the brand’s identity. Although, safeguard that, too much branding might damage usability since the user may lose its focus on the APP business context (Nielsen & Budiu, 2012; Apple Inc., 2015).

These indicate that a good requirements approach has to be considered on mobile applications, and the follow up of trends is more and more common nowadays in the mobile development process.

2.3 Mobile Human Computer Interaction

For start, it’s vital to understand what Human Computer Interaction is. HCI studies how people interact with computers . It focuses on discovering methods and techniques that support people upon these interactions. HCI uses productivity, safety and entertainment to study, support and fulfill human-computer interactions and it can be applied to various types of computer systems, including for instance, computer gaming and mobile applications. HCI systems should be easy, effective, safe and pleasant to use, in order to capture, emerge and hold the users.

However, one key factor of HCI is that all users are different from each other, so they form different conceptions or mental models about their interactions and have different ways to perceive, learn and keep knowledge and skills. In addition, cultural and national differences might play a big part in such factors (Wich & Kramer, 2015).

Another consideration in studying or designing HCI is that the user interface technology changes rapidly, offering new interaction possibilities to previous research findings may not apply. Finally, user preferences change as they gradually master new interfaces.

Attention to human machine interaction is important, because a poor interface can make it hard for users to benefit even from the simplest systems.

According to Botha, Greunen and Herselman (2010), the interdisciplinary nature of HCI allows Mobile Human Computer Interaction to feature as a sub-field of HCI. Despite of the natural sharing of commonalities, there is a fast difference between these two disciplines. MHCI is an evolving discipline which has deep roots and applications in computer science and HCI, as is often the case in similar young research fields, has had focus primarily on the production of solutions. It is suggested that the definition of MHCI should be tailored to the emphasis of the field and the appropriation of the technology in the same field.

This line of thought is applied to mobile and mobile interaction with users. Mobile Human Computer Interaction is the study of the interaction between people and mobile systems and applications that they use on a daily basis. In MHCI is crucial to understand the users and what tasks do they want to perform using a mobile device and its applications (Botha, Greunen, & Herselman, 2010).

Specific mobile features such as availability, computational power, or high-resolution screens make these devices very useful, which enhance the role usability plays when it comes to software design for human-computer interaction with mobile devices.

As Wich and Kramer (2015) state, over the last few years mobile technology has revealed enormous growth in the field of human-computer interaction as it started to have a crucial role on society's ordinary life. This resulted in a worldwide fact, people started to use mobile devices more and more extensively, mainly due to the high user-friendly devices and to its degree of usability. This notorious trend had an impact on the development process of the products as well. To achieve this extraordinary level of usability it is inevitable to gather future user's needs as soon as possible in the development process. An essential aspect in this process is the feedback obtained from the involved users. In order to make this involvement efficient it is necessary to have valuable evaluation methods, which for mobile applications there is still a lack of well-verified methods that support the usability procedure in order to improve this human-computer interaction.

Therefore, it is vital to consider MHCI during the usability development process in order to achieve its main aim, to provide the user with a satisfying experience that he will never forget.

2.4 Mobile prototyping

Great design is about taking a step back and knowing when to simplify things. Sometimes less is more. This is where prototypes come in, so that the user's needs can be met and simplified from an early phase in the development process.

According to Sá and Carriço (2007), mobile devices have exceptional capabilities that distinguish them from common technologies. Size, weight, portability, and its unique interaction modalities and innovative features allow them to be used universally on a wide range of situations and contexts for a diverse set of purposes. However, these same potentialities, together with the normal hardware limitations that comes with is portability characteristics like small screens, battery life and input capabilities present colossal challenges when designing specific applications targeting these kind of devices. The goal is to provide users with applications that enhance their tasks, maintaining the same usability levels that users now demand.

Upon sketching or prototyping, several evident problems can be retracted. However, low-fidelity prototypes are, as they are being used, poorly suited to the particularities of mobile devices and their peculiar usage scenarios.

Once more, according to Sá and Carriço (2007), low-fidelity prototyping for mobile devices use classic prototyping approaches, with simple cards or paper sheets, and low accuracy regarding the screen dimensions and available components such as drop boxes, text fields, amongst others. This might introduce a set of problems on the evaluation of these prototypes. Components and their size misguided users and resulted in less realistic and unfeasible prototypes. Moreover, together with the design fidelity details like size and components, more credible tools than post-its or cards were necessary. These started to mislead users, which according to Sá et. Al. on a “Mixed-Fidelity Prototyping Tool for Mobile Devices” (Sá, Carriço, Duarte, & Reis, 2008) led to a stage where the degree and complexity of functionality of the prototype should be shaped. Wireframes with “clickable” areas like is shown in the figure 4 below, can be produced, generally over an element with which it is possible to interact, like for instance list, and dropdown.

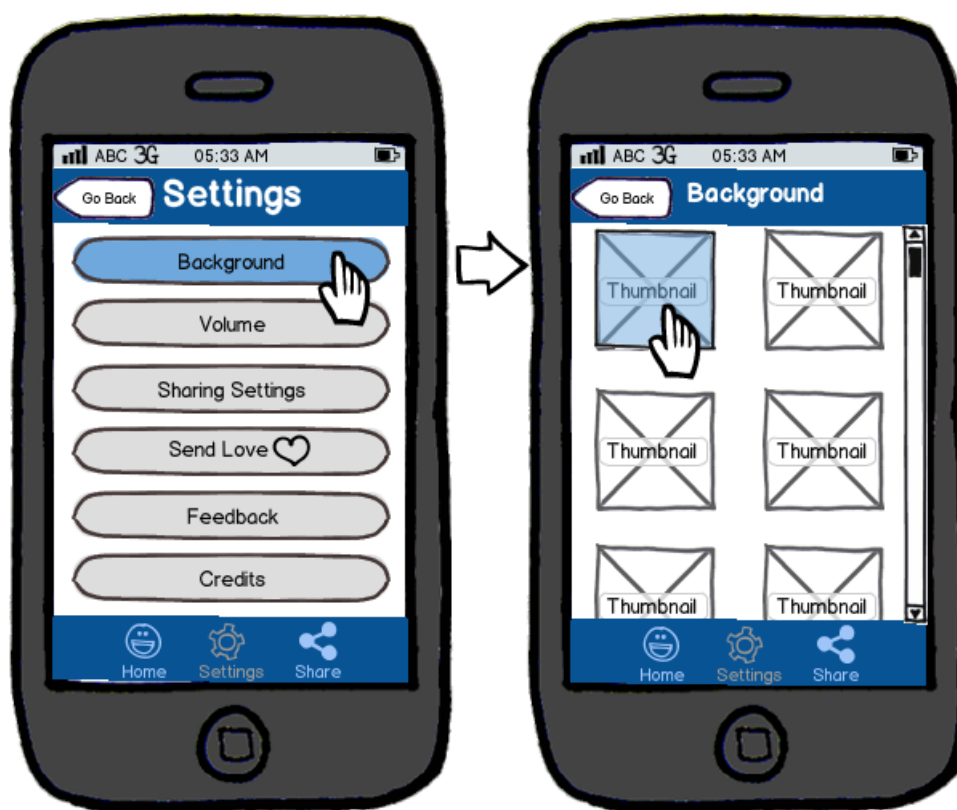


Figure 4 – Mobile “clickable” wireframe

Then again, on a higher fidelity prototype, elements of the screen such as drop-box, contains a number of items Text-field receives an amount of characters that can be activated or deactivated and used merely for screen arrangement demands, enabling testing in quite a few scopes. For instance, it’s possible to compare different elements or evaluate its location. Thus, it is also possible to add or eradicate functions to some point or just use the prototype for screen navigation, color, or button size tests.

2.5 Usability testing on Mobile Applications

For starting it is important to understand the concept of usability. In common terms, usability can be understood has the simplest way which a user can perceive and learn to interact with a product human based developed. In a more technical term, ISO standard 9241-11 defines

usability as “the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use” (ISO 9241-11, 1998).

Usability testing has a specific and clear purpose, evaluate the user interface and guarantee the quality of the system provided. It has a specific and clear purpose, to help detect usability problems and to reach a solution to these problems by gathering feedback from the point of view of the user (Bandi & Heeler, 2013). This means it is also a powerful tool to better understand and improve the user experience. A large number of studies have shown that, performing this kind of tests with a range from 5 to 7 people can discover up to 80 percent of points that need modifications, just by observation and communication (Haiyan & Baozhu, 2011).

Although, in order for this to occur in an effective and innovative way, some research framework might be followed, like dividing the tests in three phases (Isa, Lokman, Wahid, & Sulaiman, 2014):

- Pre-study
- Experiment
- And, Post-Study

The first phase is done in order to specify the goals for the test and to capture the participants for the test.

On the second phase, the actual testing part is performed, in which the participants will perform real task and where the researcher will observe and record the interactions and inputs provided during the test.

Finally, on the last phase, the results will be analyzed in order to diagnose problems founded and to overcome those problems with recommendations of possible improvements.

Since we have been entering into the mobile space and living in the age of its incredible boom, with more and more powerful devices and the release of new apps every, is important to internalize that companies are almost forced to invest in superior quality so they can compete. Knowing that mobile devices and applications provide significant advantages to the users, in terms of portability, location awareness, and accessibility (Nayebi, Desharnais, & Abran, 2012), understanding that mobile learning is possible anytime, anywhere and that it can be customized with a simple click in a mobile device, is the first step to know how to display information and how to interact with limited inputs, is a key point of mobile usability. Thus, taking usability and user experience into consideration not only at the beginning of the design phase but through all the development, is the most effective way to meet users requirements and needs (Li, Wang, Wang, & Li, 2011).

Conducting mobile usability testing includes, as Zhang and Adipat introduced (Zhang & Adipat, 2005), some of the new mobility-related challenges, such as: Mobile Context, Connectivity, Small Screen Size, Different Display Resolutions, Limited Processing Capability and Power, and Data Entry Methods.

Likewise, Nayebi, Desharnais and Abran present the state of the art of mobile applications evaluation, (Nayebi, Desharnais, & Abran, 2012) appointing three distinct methods that are currently used in mobile usability testing. They are as following:

1. Laboratory experiments, which take place in a controlled laboratory where human participants interact with a mobile application.

With this controlled environment it's possible to test all the usability aspects and isolate users from conditions that can affect the relevancy of them. Plus, this makes it possible to compare different mobile designs and interfaces, while recording the interaction the user has with it. However, setting the users apart from environmental factors that might affect usability may impact their user experience, since these factors are always present in the real world.

2. Field studies, which is a more general method, where it is possible to collect information about users, user needs and product requirements.

It is useful in mobile app usability since you can measure the human participant performing real tasks in a real environment, still is harder to have control over users during this tests.

3. Hands-on measurement, which is method based more on standard measures, like safety, accuracy and simplicity.

It is important to safeguard that all these methodologies have positive and negative aspects, for instance in the first methodology, laboratory experiments, there is the possibility of controlling the environment but, due to the equipment needed it might become expensive. On the other hand in field studies you can observe the users in the real world but is the chance of losing control of what is meant to be tested.

It is safe to say that learnability, the help and problem solving capability, emotional aspects and multimedia properties, commands and minimal memory load, control and efficiency, and typical mobile phone tasks are aspects that influence mobile usability and its goals.

Common practices normally fall on just one of these methods. Nonetheless, a field study, together with the hands-on approach, might be more conclusive in mobile usability testing, since it combines the user experience testing of field studies with the professional measurement of the hands-on method.

3 State of the Art of Application *Continente*

Some indications for the upcoming years, based on an internal study conducted by Accenture, reveal that mobility will represent between 15-20% of the global market in terms of food and non-food retailing.

Current customer behaviour in more mature markets is starting to reflect this trend. Customers are heavily adopting mobile technology in many parts of the purchase process like lists, browsing and price checking among competitors. Smartphone customers have higher probability to become in-store mobile shoppers than non-smartphone customers.

Mobile customers or shoppers, as they can also be called, are becoming more and more relevant in the market and with potential to grow significantly.

The investment in customer mobility is almost inevitable in order to improve customer loyalty. This is done by leveraging new, engaging tools, reinforcing the brand's image and taking advantage of the mobile channel capabilities. This, not only enhances the physical store experience but also, potentially leverages e-commerce and m-commerce business.

Customer mobility is also becoming increasingly relevant for the Portuguese market and, especially, for Sonae MC, a major national player in terms of mobility tools and currently placed in the vanguard of mobile APPs offered to its customers.

3.1 Mobility at Sonae MC

Mobility at Sonae MC started to grasp potential and to show some pain points back in 2010. A pilot trial was conducted to properly approach customer mobility and all its complexity. Done in a sufficiently systematic way, this led to the need to define a structured customer mobility strategy, with a vision clearly expressed: "Be with our customer wherever he/she is!" and a set of objectives identified to properly address customers' brand recognition, awareness and experience through a multichannel integration.

During this trial, the key customer experience stages were mapped, with the achievement of a group of retail mobility main requirements, which were the genesis of the mobility initiative.

Therefore, mobility main challenges, as a strategic driver for leveraging value into Sonae MC's organization is to increase expertise and knowledge in a leading and innovative new field, while increasing customer recurrence out or in stores and consequently leverage customer average spending and customer retention through the enhancement of satisfaction. Another challenge that occurred was the increase customer recurrence to the e-commerce experience. Basically, mobility is the last piece of an Omni-channel journey, aiming to truly change the customer's buying experience through a constant and genuine mobile presence.

All of this led to the mobility strategy implemented which conducted to the development of Sonae MC core mobile application and the main subject of this practical research, the "APP *Continente*".



Figure 5 – APP's Sonae MC available on the Stores

The effectiveness of mobility was proven by the development of a dozen new apps in just four years. Currently, Sonae MC mobile eco-system is built upon nine apps, as presented by the figure 5 above, available at Apple store and Google play, and with ongoing innovative and leading new projects.

3.2 Overview APP Continente

As it was presented before, the business strategy for mobility is very peculiar. It settles down in a central APP, focused on the physical loyalty card of the company, which turns to be surrounded by other APPs called complementary.

The *Continente* APP provides customers with an outstanding help upon the shopping process in brand stores, such as *Continente* hypermarkets and supermarkets stores, *Bom Bocado* coffee shop, and Well's.

Basically, this application allows customers to use their virtual loyalty card at the physical store. Being able to leave the card at home and still be capable to accumulate cash balance or check coupons availability, or even, use the cards on all the transactions, can be a considerable plus in the customer's experience. Other options are, for instance:

- Check the purchases made in stores in the last 30 days and seeing the promotional values accumulated with those purchases.
- Create your own shopping list and transform them into real products when using the APP in *Continente* stores.
- Search products by name or simply by scanning its barcodes.
- Check the nearest store or the complete list of stores

All of these, are part of an enormous potential in the hand of customer, accessible with a simple touch.

To go deeper into the process of understanding the APP's usability and user experience, and based on a persona approach, "Maria" was created, through the observation of real customers in a real environment.

A customer journey on *Continente* APP was conducted. Maria represents a particular segment of the *Continente* APP users. She is 34 years old, born and raised in Porto, married, mother of a little girl and she is a math teacher. Due to the current situation of the country her main professional goal is to keep teaching. Personally she would like to have another child and buy

a new car. Jogging is one of her favorite hobbies, an activity that she practices three or four times a week while listening to a good rock music playlist. She also loves to read and to eat healthy, but she is addicted to Coca-Cola.

Recently, Maria began to use the APP *Continente*. She likes the experience, especially in the purchase phase. However, despite of this, she thinks the APP can still improve in some aspects.

This journey goes from the first moment Maria enters the application until the very moment she does a purchase, and it is illustrated widely in Attachment A.

3.3 Benchmarks



After a wide range analysis on the Sonae MC mobile APP's eco-system and, more specifically on APP *Continente*, which is the main resource under study, some benchmarks were conducted, in order to question the current market situation in terms of what competitors are providing to their customers and how they are doing it. This aims to identify which functionalities might be more crucial in this threatening process of capturing the customers into mobile, and holding them embedded by offering them a complete and unforgettable mobile journey experience.

The benchmark was made, firstly based on international players already well positioned in the mobile retail market, such as Tesco, Walmart and Target. The last one, Target, carries a familiar mobile business strategy with one key APP and complementary ones that enhance the value of the main one.

The result of this market research can be seen in the figure 6, below. The figure shows a list of the main functionalities that these APPs provide to their customers.

It's important to safeguard that in terms of "shopping list" Walmart only offers this in the iOS version of the APP, and that Tesco's APP includes a deep link between this and its clubcard APP.

Another important conclusion is that Target's APP provided all the major functionalities identified, and it's the only one providing an in -store map with in-store location of cataloged products. In terms of stocking control, while Target and Walmart choose to offer this option, Tesco offers a different mechanism by presenting the possibility to substitute disrupt products for others in stock.

			
Login	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Promotions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Shopping List	<input checked="" type="checkbox"/>		
Search field	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Checkout	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Scan Product	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Store map	<input checked="" type="checkbox"/>		
Stock Checking	<input checked="" type="checkbox"/>	Product Substitutions	<input checked="" type="checkbox"/>
Store Location	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Promotional Catalog	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Social Integration	<input checked="" type="checkbox"/>		


 APP Tesco Clubcard

Figure 6 – International Benchmark Conclusions

Since this analysis is crucial to overcome competitors and to maintain a competitive advantage, some national players and players with businesses in Portugal, were, also taken into consideration,. The research was conducted on the APPs offered by Pingo Doce, Nespresso, Ikea, McDonalds, El Corte Ingles, Lidl, MiniPreço and Intermarché. None of this players offer an APP with the same context of Continente's APP, since their main focus is brand building with special emphases on promotional awareness, as it is shown in figure 7.

The only exception is Nespresso that helps the customer in a purchase context, during in the order process, where it is possible to make reservations and collect the products later in a physical store.





								
Login	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Promotions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Shopping List	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Search field	<input checked="" type="checkbox"/>	Filters	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Checkout	In Store	In Store	In Store		Online			
Scan Product	In Store		<input checked="" type="checkbox"/>	QR Code				
Store map			Physical Blueprint					
Stock Checking	In Store	In Store	<input checked="" type="checkbox"/>					
Store Location	Check in	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Promotional Catalog			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Social Integration			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Figure 7 - National Benchmark Conclusions

In short, the retailers under research have chosen to join the purchases support features of physical and online store in the same APP. However, by developing them with a specific scope, and focusing on the features, the look and feel of the APP isn't very appealing. It is noteworthy that the majority of these APPs guide themselves through UX pattern designs established by the so-called "trenders", like Apple and Google.

Back in Portugal, the retailers with mobile market have elected more branding APPs with special emphases in features such as promotional catalogs.

3.4 Preliminary Questionnaire

Understand what users really want and what they really expect is a key factor to obtain success. The APP was developed to generate value for the users, surprising their needs and make them satisfied. If this isn't the main purpose, the app doesn't have many reason to exist. Therefore, in order to identify possible points of pain and collect point to improve, it's crucial to ask users and really understand their demands.

For this it was decided to conduct questionnaires, which can be seen in attachment B. These questionnaires were made with real customers, the *Continente* customers, on a real environment, the hypermarket *Continente* of Matosinhos.

Continente of Matosinhos was the selected store because it is the one with more usage of the APP in store, in other words, it is the biggest store in terms of mobile adhesion.

The intended goals for this action was to observe customers in a real life situation, while gathering their feedback in terms of usability, design and user experience of APP *Continente*. Also, we aimed to understand the frequency and purpose of its utilization, according to the following approach:

- If the respondent has never used it, then he/she would not complete the questionnaire, but would receive some insight about the APP and would be encouraged to download it and try it.
- If the response was positive in terms of usage, then the questionnaire would be addressed completely.

The results were as following:

- **Participants**

Altogether, about 83 different persons, with ages between 21 and 42, were approached to take part of our questionnaire. As we can see from the following figure 8, 69% of the participants never used the APP at all.

Uses the APP?

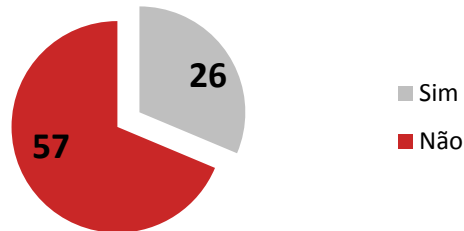


Figure 8 – Questionnaire Data Analysis, APP Utilization

After filtering out the people who never used *Continente* mobile application, only 26 participants remained (31%).

The majority of users were female, with 65%, one possible explanation is that women are the gender that still does most of the shopping purchases. In terms of smartphones usage, 62% of the participants hold an Android device.

- **How often is the application used?**

In the figure 9, bellow, it's possible to see how often the application is used by the testers. About 31% use the application once a week and 27% uses it from 2 to 5 times a week; 19% of the participants use it every time he/she is at a store.

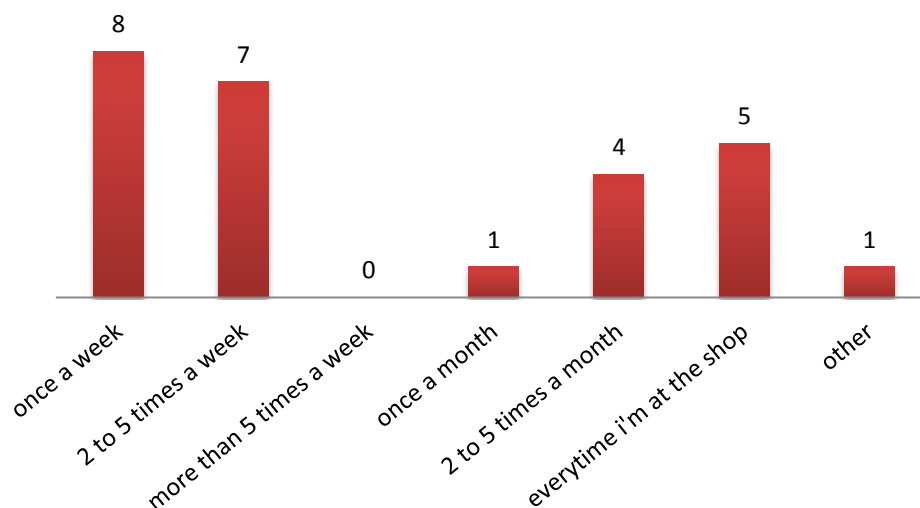


Figure 9 – Questionnaire Data Analysis, Frequency of use

- **Why is the application used?**

As proven by the figure 10, the application is used mostly to check card balance (81%) and to check coupons availability (77%). Checking the promotional catalog is also an appreciated feature with almost 38% of the participants responding affirmative to this.

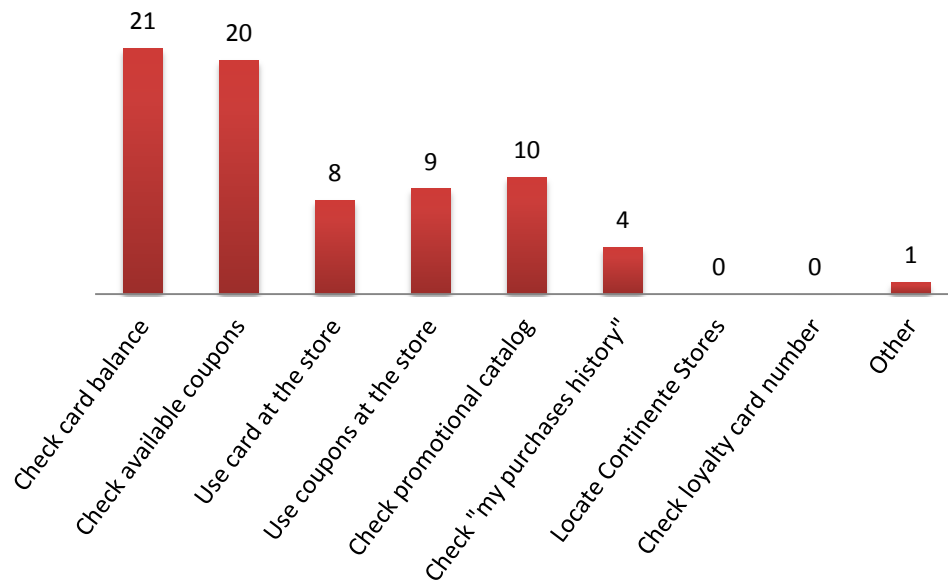


Figure 10 - Questionnaire Data Analysis, Reasons to use

- **How is the interaction with the sliding menu?**

Figure 11, below, shows us the level of interaction regarding the current menu of the APP. Almost 62% of the participants feel that the slide menu is navigable, which still mean that is possible to improve.

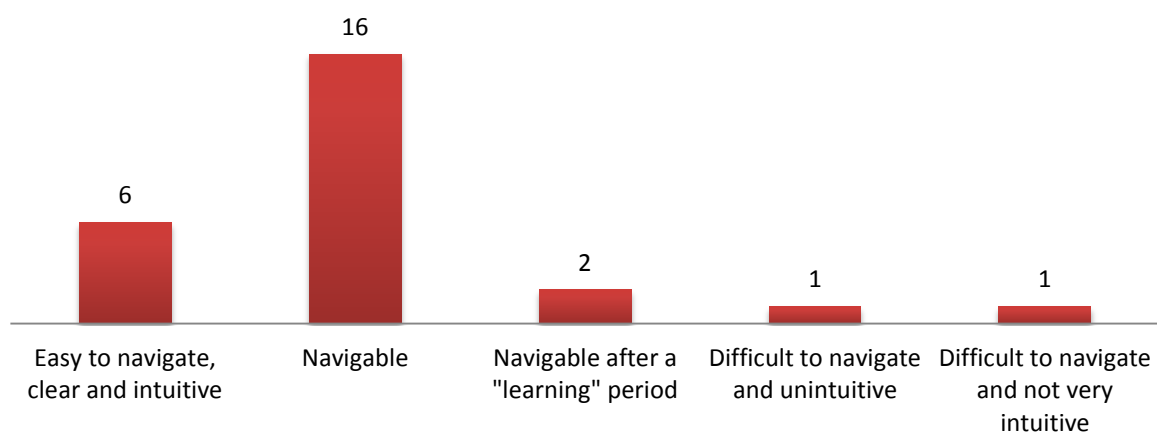


Figure 11 - Questionnaire Data Analysis, Interaction with the current menu

- **Evaluation of the application in terms of complementary functionalities**

In the figure 12, it is possible to see the evaluation of complementary functionalities. The parameters go from “never used”, displayed on the left side, to “did not know it existed”, “not useful”, “uses casually” to “uses regularly”, which is on the right side.

With the exception of the search for products that is used casually by about 38% of the participants, the other functions all almost “never used” with special focus on the FAQ’s, about 81%, logout and list of stores, with proximally 62%.

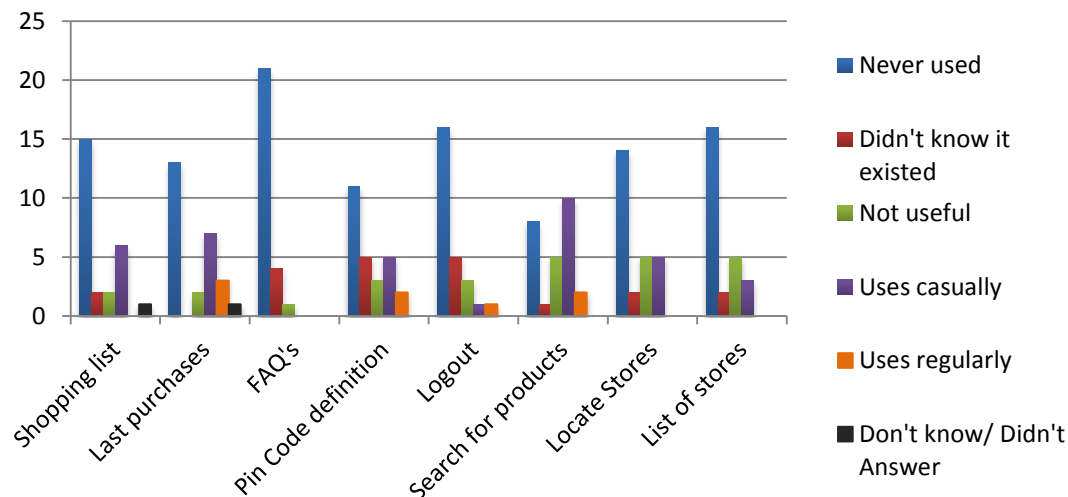


Figure 12 - Questionnaire Data Analysis, Complementary Features

- **Evaluation of the application**

Below, in figure 13, it is possible to see the evaluation of the application by the participants.

The values go from “very bad”, on the left side, to “bad”, “acceptable”, “good” to “fantastic” on the right side. The overall evaluation, in terms of global satisfaction differs between acceptable and good.

It is important to safeguard that the usability is the most appreciated characteristic, from those under study.

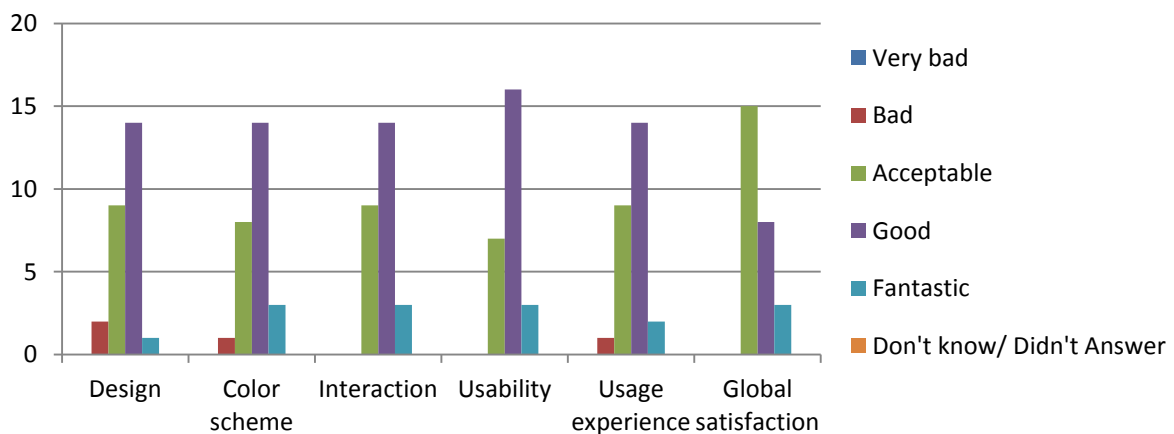


Figure 13 - Questionnaire Data Analysis, APP Evaluation

- **What can be improved?**

It's important to ask the customers their needs and what they want to be provided. Therefore, the figure 14 below, illustrates the voting about what could be rethought and maybe improved. The three main aspects that customers would like to be improved are the features offered, optimize existent functions and add new ones (65%), the overall design of the app (35% think it could be more clean and appealing) and about 27% think the promotional highlights could also suffer a rearrangement. These results show clearly that the application has a lot of space for improvements.

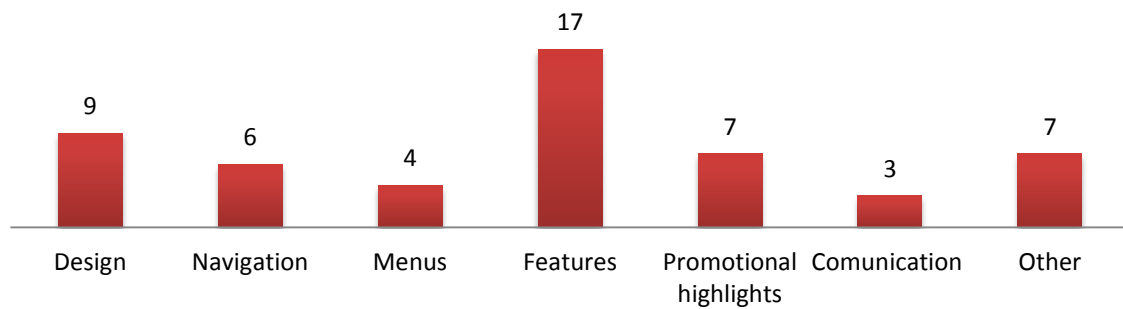


Figure 14 - Questionnaire Data Analysis, Possible Improvements

Some important comments retrieved from the questionnaires:

- “Integrate APP Listas and APP Tira-vez within the APP *Continente*”
- “Optimize in-store mapping”
- “Integrate the remaining APPs from the brand and have the option to choose which one you intend to use”
- “More interaction between the APP and the website www.Continente.pt”
- “A place where I can check the notifications I have received”
- “I would like to easily have access to the top promotions of my top purchases”

It is important to safeguard that almost 70% of overall customers that were approached did not use the APP or even had knowledge of its existence.

As taken from the results displayed above, the APP is mostly used to check card balance and coupons, to use them at the store, and to check the promotional catalogs. In general, customers think the APP is quite navigable, although about 20% think that a learning period is needed to better understand its utility. Complementary functions such as shopping list, search products and locate stores are almost not used by the customers, that simply don't see interest on them or don't even know that they are provided. The optimization or the addition of new features are what most customers would like to be improved, 65% responded affirmative to this, while 35% believes that design might suffer some improvements too.

Broadly the APP is well accepted by the customers.

3.5 Requirements

As it was already mentioned, APP *Continente* is a physical store auxiliary context based mobile application, which incorporates the power of the physical customer card and the discount coupons, so it can be used in store purchases.

Speed, convenience and simplicity in consulting the card balance and available coupons as well as the purchase history and assets flyers are some of the features offered by this unique and innovative service.

After the analysis of the results acquired with the questionnaires, some crucial insight was gathered in order to specify the requirements for the new version of the APP *Continente* that would be the object of test. It will also, probably, lead to the enhancement of the user experience provided via APP and that will be mirrored on the UX Book, which will serve as a starting point for all the APP implementations of the organization.

This said, and based on the results obtained, the requirements were catalog in two dimensions of functionalities: core and complementary.

The core functionality, are the ones with most appeal to the customer, the ones that call their attention, giving value and grabbing them. They can be requirements related to the card and coupons usage and with the consultation of the promotional catalog.

Concerning the second dimension, complementary, the main goal is to enhance the user experience through the interaction with the APP. These, are the ones that makes the user to choose one APP over another. Therefore, and regarding the APP *Continente*, the requirements about the user account and definitions were taken into consideration, as well as search and interaction with stores and products.

It was specified that the card and coupons functionalities will be aggregated and tested as just one, and would be called coupons maintaining features from both, checking and store usage.

The promotion aspect of the APP is also something to be taken care of. A non-logged home page with more promotional matters and communication is also required, and is something that will grab the user instantly.

On the subject of stores and products, as they are practically unknown or unused, trying to enhance their value is also a aspect to consider. To do this, the introduction of new features in both as well as a filter that will help during the search process, it was proposed.

A completely new functionality that was suggested, is the inbox, which will keep all the communications, made from the brand to the user. This inbox will also provide related interactions such as, for instance, a redirect link to the promotional catalog when a promotion is received. This might be a small detail but that might be of extremely importance, and as is well known less sometimes is more.

Introduction of gestures, like swipes, slides and double tapping, as well as social network sync is also something relevant and nowadays, a mobile must.

All of these requirements plus the APP renovated look and feel will be more explored in the next topic, about low-fidelity prototyping.

3.6 Mock ups

Planning a reliable mock up is one very essential aspect of successful design, is one of the first steps in the APP development process. It expands functionality and brings forth better ideas. It's a great way to get a feeling of what the app's functionalities are and which parts need further clarification.

The elaboration of mock ups was also the method used in this process to elaborate the UX Book and enhance user experience. Based on the requirements previously defined and since the APP already existed, a more graphical mock up approach was selected for this structuring and designing process.

The main goals for these mock ups were to allow the test of two different models, in terms of user experience and usability, having as basis different navigation menus, so it will enable us to understand what might be standardize among the development or restructure of the APPs of the organization.

For the development of these mock-ups, the Balsamiq software was used.



Figure 15 –Mock ups, Two distinct APP landing pages

As illustrated above in figure 15, two models were elaborated having as basis two distinct navigation interactions, and presenting different but light designs for both of them, in terms of layout structure, color scheme, and the different positioning in app of UI elements.

The model presented on the left is based on a sliding menu, while the other presents a fixed navigation menu on the bottom of the screen.

All the mock-ups follow this methodology and will be further illustrated on attachment C. This will also lead to the development of two distinct prototypes that will be tested and further explained on the next chapter.

4 Testing with real Customers

It is a fact that UX is important. However, when it comes to sell UX work, it can frequently feel like nobody else seems to get its importance. Clients and even colleagues often seem completely intractable to ideas when we present them. This is where testing comes around and becomes absolutely vital to sell an idea and improve the development process and consequently enhance user experience.

Ask more, speak less. The more you listen to your clients and potential clients the more likely you are to truly understand them. Questioning is good but, knowing when to be quiet and let the clients do the talking is extremely important.

As you start working on designs, check how they come across to users. You should test your visual designs before they have even been animated, to be certain that users can understand them with a simple peek. Test button and icon designs, and any interactive widgets you have created. Often this is the stage where the team will debate about design details. The tests are a crucial tool to quickly settle those debates.

The purpose of these tests is to understand which problems the users face when they use the service provided by the application *Continente*. The tests were structured based on the results obtained in the preliminary questionnaires conducted in an action on the hypermarket *Continente* of Matosinhos and also in some ideas the team wanted to test, as a result of an analysis on the current APP.

Therefore, this was the approach used in APP *Continente* and that will be further explored in this chapter 4, starting with the preparation of the test, in which it will be explain the methodology in use and its execution, and consequently exploit the results obtained.

4.1 Test preparation

Normally the best results come from testing a particular “journey”, the process of using a specific APP characteristic. The key is the correctly choose the journeys, and start by testing them. By focusing the test, you will get more actionable feedback.

As we are trying to redesign APP *Continente* and use its core features to normalize the development of the remaining company APPs a question might surface: How far should we go in changing the look of an existing APP?

Changing the look of an APP can create intense dissatisfaction among your client base, the ones that are familiarized with it but, it can also attract new ones. So, it is strongly recommended that the tests are to be run on major UI changes before they are pushed into the market.

Two factors that are critical to the success of a mobile APP and that were object of study are: Usability and Emotional Engagement.

Usability means the capability of a common user to easily figure out how to use an APP. Mobile users are notoriously impatient, if an APP is complicated to use, they will probably move on to another one. This is one point we want to prevent, so, we can never assume that it will work. To test is the way!

Early in the process you should test the basic flow and key features of your APP. Do users understand what they are supposed to do? Have you made the most important features easy to find?

It can be very hard to decide which features to prioritize on mobile. User testing can help you answer that question.

Later in the process, you should focus on perfecting navigation and user flow. Do all the buttons and icons make sense? Does your help system work properly? Yes, a helping mechanism is needed in any mobile application, provide the user with adequate feedback is a crucial mobile aspect.

Also, the objective is not to test the functionality but to test the experience provided by that functionality, so it is possible to identify bugs as well as experience issues.

Regarding the subjects under study, normally as few as five users will be enough to allow you to detect most of the problem you would find in an APP. But, for many, between five and ten users is the perfect range for testing purposes. If you sense this analysis is not enough, it is better to do multiple rounds over time, rather than to group them all together.

Taking all of the above under scrutiny, a base of ten *Continente* customers were selected for this study, it was wanted that the users were already familiarized with the brand. For demographic reasons the clients selected were from the metropolitan area of Lisbon. The main differentiator factor was the client previous experience with the APP, meaning if they already had contact with the APP or not. This said and from this range of ten, two categories of five clients were established, users that already use the APP and users that never had contact with it. The table 1 below shows some major characteristics of the participants.

Table 1 – Test participans Characteristics

Participant ID	Age	Gender	Occupation	Previous Experience	Smart Phone O.S.	Smart Phone skills
#1	29	Male	Transporting Area Consultant	User	Android	Expert
#2	41	Male	Data Management Consultant	Non User	iOS	Beginner
#3	43	Male	Accounting Technician	User	Android	Average
#4	32	Female	Banking area	User	Android	Average
#5	45	Female	Lawyer	Non User	iOS	Average
#6	54	Male	Management Consultant	Non User	Android	Expert
#7	30	Female	Chemical Engineer	User	iOS	Average
#8	39	Female	Pharmaceuticals	User	iOS	Expert
#9	42	Female	Secretary	Non User	Android	Average
#10	37	Female	Financial Assistant	Non User	Android	Average

At the same time, while the possible testers were being contacted for the practice, it was crucial to know what we were going to test and to choose the method to apply on these tests. Therefore, it was decided that we would test both the prototypes made previously in terms of user perception of the features already existing in the current version of the APP as well as some new features proposed on the questionnaires and debated inside the mobility team. As the main goal of this project is to develop an UX Book that can standardize the elaboration of the apps, so that the user feels a constant brand familiarity through those, it is also of extremely important to profoundly test the experience either of this new possibilities might reflect on the users as well as test design as a whole and go further on design elements, such as buttons, colors, animations, navigation menus, pages layouts among others with the same importance.

After this, a methodology approach was also thought. Consequently a script was written with all the stakeholders involved. This script, presented on attachment D, beholds the test method structured in four distinct parts.

1. The first one is the introductory part, where is a familiarization between the client and the person who is conducting the interviews, and where is explain the purpose of test.
2. Related to the second part of the script, there is an exploratory procedure towards the relationship between client and the brand *Continente*, the experience in the physical stores as well on the online store and mobile APP. However, the main focus of this

section two is to understand if the client uses or not the APP *Continente*, with what purpose, what features are more used and less used, how often the APP is used, and also to comprehend, if that is the case, with the client does not use the APP.

3. On the third section, the interviewer sends by email or text message the links of the two distinct prototypes under study and invites the client to download and install them on his/her personal smartphone, iOS or Android, this approach was chosen to facilitate the interaction since the client should be more familiarized with his/her device. Here, the client is encouraged to explore a bit both the versions, one at a time, and to talk about what he/she sees, since the client is still under no influence these first impressions are crucial and extremely relevant, especially in aspects such as navigation, design and also features provided.
4. After this period of the interview, and if the client hasn't covered everything that is on the script for this part, the interviewer will force some scenarios.
5. We proceed for the last part of the test interview, the test printed versions of the prototypes, comparing one against the other. The objective of this last part is to get crucial design and layout insight from the clients towards the elaboration of the UX Book. Here, UI elements, such as buttons, color palettes, icons, page titles and many others are exploited in order to take the necessary steps for this elaboration and at the same time try to obtain the parallelism between the versions under testing with the current one.

Traditionally, user testing takes place in usability labs that is usually specially equipped. These tests were also conducted in a lab environment. The lab has a test room and an observation room divided by a soundproof wall with one-way-mirrors, as shown on the figure 16 below. During the test, the lights in the test room are on, but the lights in the observation room are off.

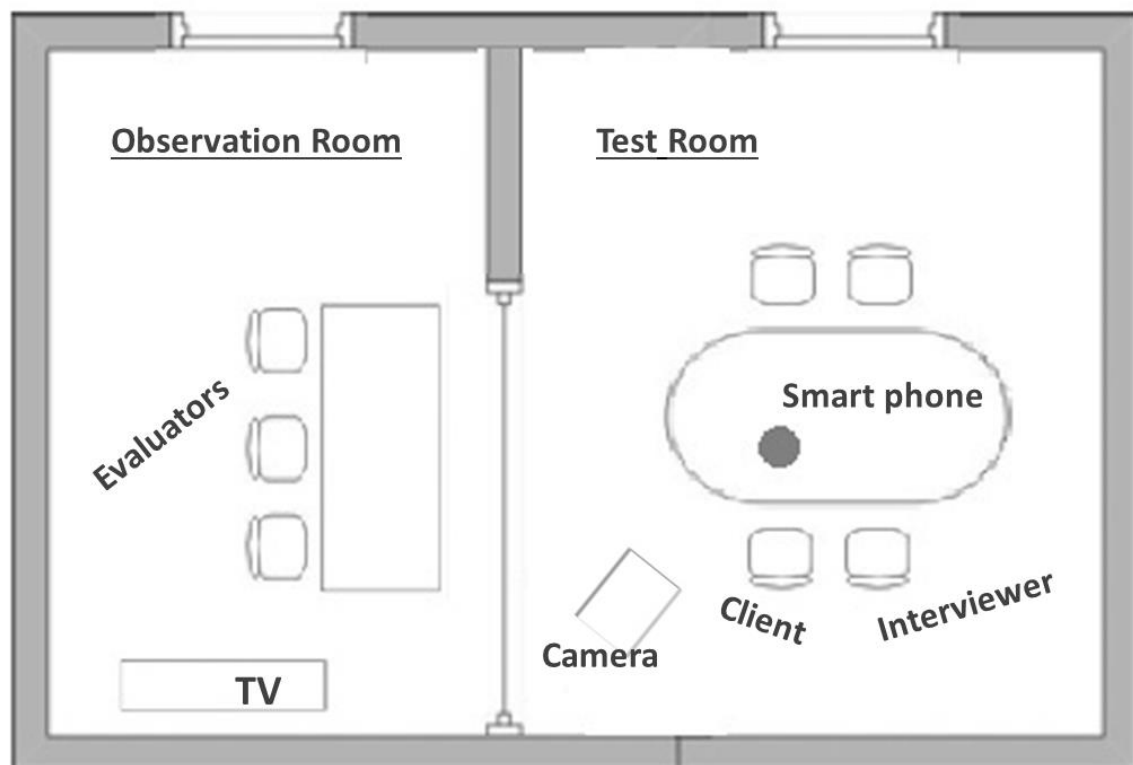


Figure 16– Testing Lab

The evaluators will stay in the observation room, while the interviewer conducts one on one interviews, where they can observe the user through the glass, but the user just sees a mirror in the test room, in this room there is also headphones and a TV, so they can listen and watch what the clients are saying and doing. The test room was equipped with a microphone and a video camera pointing directly to the place where the client should put his smart phone.

4.2 Test results and analysis

“Testing with real users is irreplaceable in most cases, since it provides direct information about how people use devices and what their exact problems are with the concrete interface being tested” (Nielsen J. , 1993).

The second part of research framework is the analysis of the results obtained on the one-on-one usability and a comparison of the two version printed in paper with the participants.

Participants are between 29 to 54 years old. The participants comprise of six females and four males. From these ten subjects, three females and two males already used the APP. There were three participants with an expert usage of smart phone skills and five participants with an average usage. To start the participants were asked about their familiarization with the APP, if they already use it, for what they use it and how often and if they don't use it, why not? The participants that already use the APP generally use it to check coupons, card balance and the weekly promotional catalog. Only two of these participants answered that they use the APP in store, upon the POS purchase. Regarding the frequency of use also two answered they use the APP every time they go to a store, the remaining three use it normally when they approach the period they want to go shopping but not in store, only if they made a shopping list with the APP. Regarding the five that don't use the APP, their answer to why they don't use it is more related to the fear of utilization and a bad communication of the APP.

After this phase, the participants received the links that will allow them to download, install and test the two distinct prototypes. It is important to refer that these prototypes were labelled by the type of navigation menu it contains, a bottom screen task bar menu on the first version and a left to right slide menu on version two.

First, we encouraged them to freely navigate on the first version and then on the second and at the same time talk about what they were performing and how, which was the next step. The interviewer invited them to make their own comments without obstruction, so they feel confident and don't retract themselves, and express their feelings towards what is good and what is not so good.

With this freely inspection of both versions under testing, it was intended that the participants get familiarized with them, so it would be possible to capture their clean minded first impression, and question them in terms of user interface and interaction with the APP, in other words the user experience the application provides.

Table 2 – Comments made by the participants regarding their user interface preferences

Participant ID	Comments
#1	“Menu slide version is more structured, more clean and flashy; Brand logo and color is more appealing, it makes me realise I’m on a <i>Continente</i> APP”
#2	“I would do a mix of both version, task bar version menu with the red bar and logo”
#3	“I clearly prefer the task bar version it is more intuitive and soft”
#4	“slide version, because has more red and I instantaneously realise I’m on APP <i>Continente</i> ”
#5	“The slide version, has more life so it’s more appealing; ”
#6	“The second version, is more readable and eye catching; I Prefer this menu; The brand logo position me on a brand APP”
#7	“The slide version structure of the elements, the layout; The red color turns it more compelling, more alive”
#8	“Task bar version because I’m familiarized with this time of menu, it’s used in many other APPs I have on my phone”
#9	“Slide version is more colourful and appealing”
#10	“Slide version is visually more attractive; Has more color, more life, more icons; Draws more attention”

Table 3 - Comments made by the participants regarding their user experience preferences

Participant ID	Comments
#1	"Task bar version is easier and intuitive to navigate"
#2	"First version is more intuitive and clean; Easy navigation throughout the APP"
#3	"The Task bar version definitely because of its easiness of navigation and accessibility; All the core functions are accessible with just one click; It is more clean and practical"
#4	"I prefer the task bar, for a question of simplicity of navigation experience"
#5	"Task bar version is more user friendly; Easy to learn how to use and navigate; It is more practical"
#6	"I prefer the slide version because is more android like, I can feel the homogeneity of this kind of menu; Practically all APPs use this menu; This menu is more intuitive"
#7	"On task bar version functions are more visible, with just one finger click I can access what I want; Simple, easier to navigate and more intuitive"
#8	"The learnability of the task bar version provides an easier and more intuitive experience, with just one click I can use the principal functions that are always present"
#9	"Slide is simpler, just click on the icon of the menu and everything appears organized and aligned; It is more intuitive and follows android trends"
#10	"Task bar is more functional; Has the menu with the core functions always present"

From tables 2 and 3 above is already possible to establish some crucial lines regarding user preferences in terms of user interface and user experience respectively. Apparently, second version, the one with a slide menu, is the more preferable when talking about user interface, the majority of the participants agree that the present of the red color and the brand logo is a crucial aspect to position themselves in a *Continente* mobile application, it gives life to the APP and it is more eye catching and as a participant commented "Visual is very important, and it makes the different, if the APP is something that won't bring me joy I will not use it".

According to table 3, is clear that the task bar version is the one preferred concerning navigation and user experience. Eight out of ten participants said that just by having this kind of menu would enhance their user experience when using the APP. From those eight, the five participants that already were common users assumed that this version is clearer, easier to navigate and more intuitive than the actual APP *Continente*. It is more user-friendly and main functions can be accessed with one simple finger tap. Two participants prefer the experience provided by the slide menu, claiming they are familiarized with the sliding menu for a question of "Android usage and trends".

This free navigation period gave the first customer insight regarding the aspects under testing, user interface and user experience. However, is essential not to neglect the main objective of

this project, the enhance the user experience of mobile applications through the elaboration of an UX Book with a standardize set of UX rules and patterns that will help do the parallelism between the company APPs in the process of delivering an easy and homogeneous experience to their clients, normalizing the image presented. But, this is not as simple as it looks. The key for a successful mobile app is to learn what works and how it works. One way to learn is by repeating testing and then optimize.

Thus, in order to go further and to create rules, another approach was needed. The last part of the test was a kind of A/B testing period, a comparison between printed screens of the two prototypes developed. No matter if you already have a live app or you are about to launch one, mobile APP A/B testing can give you the information to retain, engage, and embrace your mobile app users properly, which is also one of the intents of this project.

We wondered, for instance, if users would use the app more if the “Use at store” button was positioned on the bottom of the page instead of being at the top. Or, if the users are fond of the color scheme proposed. A/B test can be the answer and might be essential to find the answers to these questions.

The process consists in showing in paper the screens developed for each version in order to go further and to inquire the participants in terms of design and which features they prefer. The questions go from the design of the pages, to the shape, size and color of the UI elements presented, such as buttons and icons, amongst other things. To do this the core features pages were put one against the other.

Table 4 - Comments made by the participants regarding “Coupons” screens

Participant ID	Comments
#1	“ Clear and intuitive; Card balance is clear and visible; Button “Use at store” on the bottom; Shape, size and brand color seems the ideal”
#2	“Red use button is understandable and it should be on the bottom of the screen for a matter of logic; Slide version is a bit more poor”
#3	“More color, to be more eye catching; Card balance on top seems to be the best, I open the app and is already there; “use button” on the bottom; Usage of the coupons is clear, I check, I chose, I use it”
#4	“ I Prefer Task bar version, slide version as too much red followed; I like the idea of having both the card balance and coupons together; Task bar structure of elements, specially the buttons design and layout”
#5	“Usage is clear; “use” button on the bottom, it makes more sense; Buttons are easy to click and the red calls my attention”
#6	“Task bar version seems better; The elements positioning specially the logic sequence of the coupons selection an usage on the bottom, but I would increase the appealing part”
#7	“The structure of the first version; Red button makes me remember that this is to use on a <i>Continente</i> store; Maybe I would do a mix of both versions, the structure of the task bar with the red bar with the logo of the slide version”
#8	“I prefer the layout of the version slide, I am already familiarized with it because it’s similar with the current APP; I prefer the “use” button in the beginning, because it remembers me the utilization of the physical card”
#9	“Putting together the card balance and the coupon is very interesting; font size I think is ok too; “use” button on the bottom makes more sense, it’s the logical thought”
#10	“Task bar has more information; “Use” button on the bottom, is the logical thinking; I think this version is better achieved but it needs something that catches my attention, maybe some color, some animation; Icons are almost universal, so they are perceptive”

Participants made their comments about the features presented on the “coupons” screens. The comments are summarized in the table 4 above. From this table is accurate to admit that the main conclusion drawn is that the layout of the first prototype, task bar, is the preferential. Participants assume that to check the coupons and then use them is the logical thing to do. Also, the majority of them think that this version needs perhaps a bit if color, so it can become more visual, more appealing, some of them even recommend a mix between the two versions, including the red top bar of the slide version with the structure of the task bar version.

Other function that is crucial for the participants is the promotional catalog. All the participants said that both versions are intuitive and easy to use. There are well positioned in

both versions. And once again there is a feeling of lack of visual appealing in the taskbar version, although here in this screen is not as visible because of the presence of the catalogs. Swiping to the left or to the right, or scrolling up and down are gestures appreciated in this kind of features, so it facilitates the navigation throughout the APP.

Table 5 - Comments made by the participants regarding “Definitions” screens

Participant ID	Comments
#1	“I like the feature to activate the notifications; The version with the squares is a bit confusing, I think there is a lot of waste of space that could be used for something; I would not call it account, but I think I would not call it definitions either”
#2	“I Prefer this kind of things in a list, it is more structured, more clean”
#3	“The big squares version is more practical; I like the icons and the text that comes with them, it gives life”
#4	“I prefer the definitions of the task bar version; I think it should be account and not definitions; Red bar with the brand logo should be always present; I like the communication made in the top, it is like a tip, says that the brand cares about its users; Activation of notifications is also important and the questions and feedback, gives a sense of confidence”
#5	“Account instead of definitions; Account refers to my personal area; I will not associate the icon of the menu to account; Makes no sense to have the card balance in this page, I think it should be displayed only on the coupons page”
#6	“ I prefer definitions instead of account; I’m familiarized with the term”
#7	“In my opinion the list in the sliding version is the best choice, it’s more organized; I like the personalization of my avatar, appearing in the centre of the page and on top like it is my profile; Definitions is something more global, account is more specific”
#8	“ The organizational layout of the taskbar version is better I think, it is easier to navigate; Account makes more sense than inside I have access to other settings; Universal icons; The power to activate or de-activate the notifications is important, sometimes is a bit annoying to always be receiving stuff; The interaction provided with the initial tip is important for the user; Historical of purchases icon I would put a calendar and not a clock, its days no hours”
#9	“Definitions instead of account; List type, is more organized”
#10	“Red bar with the logo is important to have, it reminds me that I’m on a <i>Continente</i> APP; I like the personalization of my account especially the avatar; I prefer the big squares option, it’s more intuitive and easy to use, for instance when I’m walking and using the app; Notifications activation is good”

From the analysis of table 5 above, it can be seen that participants enjoy the power of activate of de-activate the notifications as well as the power to personalize their account, for example with an avatar “profile” picture.

Regarding the layout structure, in dashboard or in list, there is not a consensus, however the majority prefers the “big squares option” (dashboard), basically because of its practical usage aspect.

Another point that did not brought a major consensus was the function name “account” or “definition”, but once again the majority thinks “account” is more appropriate for this purpose, it leads to the personalization of the users account.

According to table 6 bellow, it is easy to conclude that the filter search is not required for the majority of the participants, they don’t mind having it but probably they will not use it, if they want to search for a store or anything else, the search button or field is the chosen option. A more alive page is provided by the taskbar version with the small icons on the store details. However, the nearest store screen is more appreciated by the participants, since it is more practical, you just need to have the GPS location on and it will display automatically the nearest *Continente* store closest to your location. To obtain the route to the store is something that is also very much valued, especially if you are out of your area, for example, on vacations and you need to go to a store and you don’t know its locations. The arrow icon of the task bar version is more intuitive than the compass one presented on the other version. Some participants pointed out, when questioned, that the card balance it is not necessary on this screens but having it there is not shocking.

Table 6 - Comments made by the participants regarding “Stores” screens and search

Participant ID	Comments
#1	“I like the life that the icons bring to it; filter icon is not intuitive; I prefer the automatic display of the nearest store; I prefer the arrow icon for the feature obtain way to the store; I like the type of selection chosen when we have two parameters option like the search for the schedule”
#2	“Search for stores is not very intuitive I the beginning but is learnable; For me the filters are not necessary, I would search again; icons of services are comprehensible, but the filter icon is not, and its position is not the best too”
#3	“I prefer the display of the nearest store; arrow icon; Filter icon is not perceptible; I prefer to search by name; Obtain route to the story is important if we have a locate store feature”
#4	“Search is clear, is written were that we can search for products or stores; Nearest store is more interesting, I just click on store and it automatically appears; to Obtain the route to a store is nice when we are out of our comfort zone; I like the details provided about the store, can be important; Filter icon is not intuitive; it makes no sense to have the card balance on the store; Services provided on the store its nice but I’m not choosing a store by this kind of services”
#5	“Services available will not get me to the store; search for a store is easy, I just have to write on the search field; filter icon not perceptible; Nearest store much better and easy; I like the little icons on the store details”
#6	“Obtain route I think it should have, for store out of our area of knowledge; To be able to filter is better than have to write the store name; Search by category is very interesting; Nearest store is better, safes the searching work; Filter icon is not perceptible, a magnifier is better; Arrow icon is better than the compass one. Small icon are an eye catching; filter might be helpful to search but if there are were not present it would not shock me”
#7	“Filter icon is not evident, it is a bit hidden; Filter I think is not needed, we can search by name I think it is easier; Obtain the route to the store can be helpful when we don’t know where the nearest store is located; Nearest store is preferable; I like the information about the services, I would go to a store for the take away service”
#8	“Services available its evident; has here a filter but is not so evident, the icon; I prefer the slide version with the nearest store; to search another store I would go to the search field; Arrow icon is more intuitive than the compass one; Little icons in the store details are appealing, makes me look at it otherwise I think I would not look at it; The information of the services might be helpful but as a searching filter I think I would not use it; I would like a map with all the stores
#9	“taskbar version makes it easy to search; I like the details of the store; Filter is not very evident; I understand the intent of the search by filter but personally I would not use it; I prefer the nearest store version; Arrow icon instead of compass one; prefer filter by hours than by proximity”
#10	“Perceptible the feature “obtain route to store”; Information about services can be present but if there are not there I think I would not mind; Filter is a bit hidden, it works but is less intuitive than a magnifier; I would not search for a store by the services provided; I prefer the feature “nearest store” displayed automatically, and if I want a different one I just search for it; Small icons on the store details gives life to it; Arrow icon instead of the compass one”

In a period where the company is betting strong in the communication with its clients by sending weekly notifications, an inbox feature was thought and introduced in both the version tested. As is well known the company works in the retail sector, so it mainly communicates campaigns and promotional discounts to its clients. This creates a new need for the customer. A place easily accessed and where this information is filed. This feature was very well received by all the participants with a special emphasis for the task bar version, where this is displayed in the right superior corner with an icon of a letter. The participants do a good amount of their purchases based on the communication they receive, so having a place where they can store that I check it later is well prized. The icon is intuitive and the fact that gives back a numerical feedback when you have new messages or messages that have not been read, is successful factor for the well acceptance of the feature. With this feature, the user can also perform an action with using the icons, see figure 17 below, which was another well-received complement. Despite the good feedback, a minority of one participant claimed that the icon passes unnoticed, and the recommendation was to put the messages inside the “account” because is something more personalized, “they are my messages, and they should be in my account”.

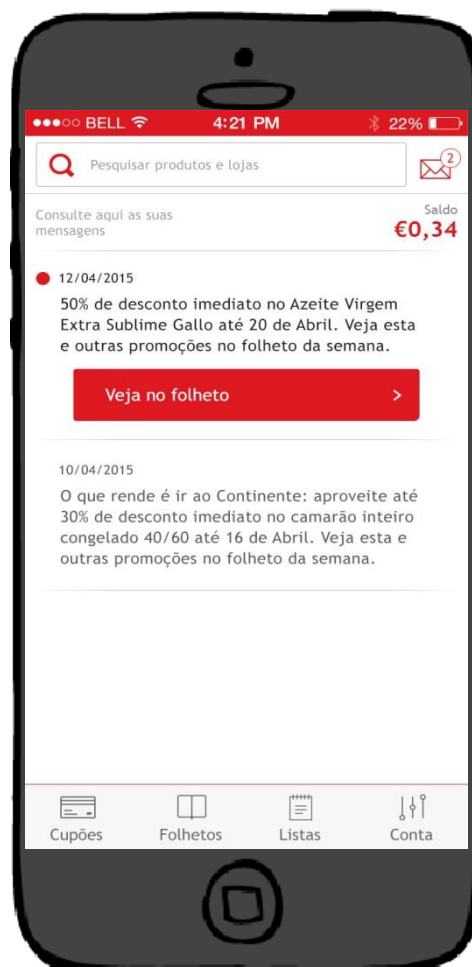


Figure 17 – Prototype, Inbox screen

To finalize, the participants were stimulated to give back some recommendations on possible things we would like to see on the APP, things that in their opinion will increase the value already provided.

It is extremely curious to notice, by the analysis of table 7 below, that the shopping list, which is a feature that is not on the core flow of the actual APP, is mentioned by many participants as something they will definitely use if well developed.

Table 7 also gives user feedback regarding other features, design and possible improvement measures.

Table 7 – Recommendations made by the participants

Participant ID	Recommendations
#1	"I would like to personalize my menu, to be able to choose the functions I would like to appear"
#2	"I'm very interested in the shopping list, I think it can be a plus for you to integrate it with the online store; the way we select the coupons could be more animated, with a double tap and then the coupon would increment on the menu icon, similar to the inbox when you have messages;"
#3	"List of purchase invoices; more color and communication about promotions"
#4	"More gesture functions like swipe to rollback an action; Card balance plus the coupons is a won bet"
#5	"Put something that reminds me that this is an APP <i>Continente</i> ; Shopping list function for me is crucial, and make possible to share it; Card balance is something related to the usage on store, so I would put it only on the coupons; A page with a list of promotions instead of the promotional catalogue"
#6	"The possibility to use the list on the online store; I miss a home page, maybe the logo could be a home page button; Increase the visual aspect; Improve the look and feel; List of promotional products"
#7	"In the coupons screen I would but first the coupons, after that the button select all and in the end the button to use them in store; Shopping list that allows me to sum what I am going to spend"
#8	"Maybe a home page is needed; I would mix both versions; the visual style of the slide version with the menu of the task bar version"
#9	No recommendations
#10	"Insert store email contact on the store details; GPS connection on the feature to obtain the route to a store; a bit more of branding, clients like that; Pop up when I have messages unread or when I receive a message with promotions or something like that"

This one-on-one experimental action combined with the comparison between the printed screens provided vital understanding regarding many usability and design issues. The study recommendations provided insights towards the formalization of the rules to elaborate the UX

book, which will be further explored on the next chapter and that will help the company to normalize the APP development process, and realize steps to take under consideration on the improvement course of the current application.

Summarizing, it is important to establish the context of the application, taking in consideration this tests and the feedback gathered from the participants and trying to align customer needs with what the company wants to offer. Never forgetting that the last word is always from the provider.

5 UX Book Mobile

There are many definitions for user experience design. After all, it is a field that thrives on creating things. UX design is the creation and management of the elements that affects users experience within a particular company, with the particular intent of influencing their perceptions and behavior. These elements might include the things user can touch, hear and see. It includes the things that users can interact with in ways beyond the physical, such as digital interfaces, like mobile phone applications. One of the most exciting developments is the ability to merge elements in order to provide the richer and integrated experience.

All of this drives Sonae MC to develop initiatives in mobility environment, contributing decisively to provide the best and most convenient shopping experience in each and every retail format, whether physical or digital, by making digital platforms that turns to leading mobile devices in use and recommendation by Portuguese families.

The key to the success is to create truly memorable, enjoyable and satisfying experiences, by understanding how to create a logical and sustainable structure for the experience and needs to understand the elements that are important to drive an emotional connection between customer, brand and application.

Fundamentally, we cannot forget that “mobile” is a reference to the user, and not to the device or application. Users are the targets, and they carry their mobile phones all the time.

It is fundamental to understand what mobility means for customers and users. Misunderstandings cause the frequent failure to create useful, relevant, enjoyable experiences.

By making the tests empowered the learnability about *Continente*'s customer base and receiving their feedback, it was possible to gather crucial insight for the elaboration of a UX book, which will be further exploited in this chapter 5.

5.1 Objectives

The development of the UX Book has its key objective in the implementation of several rules to ensure *Continente* consistency in its presence on mobile devices, on the APP already launched and on the future APPs to be developed by Sonae MC.

This document is the starting point for mobile applications Sonae MC in terms of user interface and user experience, which means, it will be continuously feeding itself around trends and other analysis related to the theme and that might grow or be refined. It's a collaborative book base on the major international trends in design of mobile applications (for example, google material design, Facebook developers guidelines and Apple iOS guidelines) and on the analysis conducted on the test done, but also in future test, and aims to ensure the homogeneity, and learnability in the user experience of each application provided by *Continente*, however we must never deprive creativity and innovation.

As it was mentioned, it is a live document that will be constantly updated, as it adapts to national and international market trends, which means all feedback obtained is extremely important.

5.2 New features APP Continente

Having as basis the study conducted on the current APP *Continente* and after the analysis that was made, it was concluded that the future version of APP *Continente* that will serve as foundation, as shown in figure 18, below, for the rethinking of the remaining APPs of the company. The APP will be optimized having features categorized as opportunities for improvement, “nice to have” features and features that may not bring additional value.



Figure 18 – Mobile Eco-system

The initial perception of the interaction, that was established between the client and the version tested, revealed that there are opportunities for improvements that could not be ignored and that will enhance the user interaction in terms of simplicity, intuition and practicality. Such are the cases of the mixture between the “card” and “coupons” old features that will climax on the new “coupons” feature. The implementation of the bottom task bar menu in opposition to the slide menu. The insertion of a completely new feature: inbox that had one hundred per cent acceptance by the participants and a stronger bet on a new and renewed look and feel with a stronger brand identity.

“Nice to have” features are the characteristics that may enhance the value proposition of an APP and that in this case fell in features like the nearest store, and the opportunity to maintain the new “coupons” feature as the new landing page, since is the core functionality of the APP and the most used one, and having the possibility to customize their APP aspects like manage their notifications and to personalize their account settings and menu settings.

At last, features like the purchase history, search by filters and information regarding branding details are perceived as features that can be present in the APP in a lower information level, but at the same time will provoke no shock if they are not present at all.

5.3 Expand requirements to the remaining Sonae MC applications

Asking directly to real customers what they'd like in an APP, it may assure that your development time and money is being used in a good way and that each feature will improve the customer experience. Still, better than this, is to create a minimal viable product (prototype) and test it in a mobile focus group environment to see if you're on the right path. These tests are crucial and were the key factor that led to the establishment of the requirements to be normalized in the UX book mobile for Sonae MC APPs, that will be further illustrated on attachment E.

Standards like layouts, help, text fields, buttons, icons, navigation menus, feedback and communication in APP were tested and based on the results obtain were put to a normalization process.

According to the observation and posterior analysis of the tests, it was possible to catalog the UX Book norms into UX rules and UI rules.

Regarding the UX rules, the ones related with the experience provided to the user, it is possible to say that we should avoid using a splash screen, or reduce its time to a maximum, users want to use the app since the first moment. Also, and if that is the case, try to delay the login process as much as possible, this demands the provision of features that does not require login, like for example the promotional catalogs from APP *Continente*.

Focus on intuitive actions and navigation, animations and interactions that will grab the users and help them in their learnability process, in a real usage environment. Don't ask users to evaluate or rate an APP on the first contact. First of all get familiarized with it, learn how to use, interact and love the APP.

Guide the user throughout the APP. Users like to know where they are and to where they can go, for this use Page titles and rollback gestures or buttons.

Don't bother users too much with communication messages, do it in a clean and focus way and always provide them with a cancel button.

Each word we display in APP should be perceived by the user as a personalized conversation. This is crucial to provide clarity and comfort throughout the APP usage. Also the language used is crucial and it should be easy to understand, and be as casual and friendly as possible, don't forget the grammatical, orthographical and punctuation control. The beginning of the sentences and titles should be uppercase.

The second norms, UI rules, are related to the design elements present on the APPs and were catalogued based on the following UI elements: navigation, menus, gestures, animations, layout, image, titles, buttons, icons, keyboards and forms.

The navigation in APP is related to how information is architected. It was decided that all the primordial information should be displayed with the most simplicity possible in order to reduce the number of taps the user has to perform to achieve something. The intent is to minimize the level of information architecture so the navigation can be more practical and intuitive.

According to the tests perform the choice for a menu should fall upon a task bar. The easiness of use and the fact that is always present with the core functions enhance the user experience in APP. Despite this, we can never forget the context of an APP. This kind of menu is extremely well accepted when an APP has a clear purpose and the number of functions is

placed between four or five. Otherwise, the option can fall on another type of menu, like the slide one, a list menu that is activated by a tap on a single icon or with a gesture action (swipe or slide) it is a more structured menu. It is important to remember that an operative system play a major roll on this selection, since for instance APPs for iOS normally display on type of menu and the Android version.

The ease and functionality of mobile devices is shifting the way we think about interactivity, diving in a new age of UI that favors gestures, a more direct form of interaction. While a few years ago you could appoint mobile devices' popularity to being new and different, today it is almost mandatory to admit there's something else behind their ongoing success. Users are finding that the control system of gestures, as shown on figure 19, below, are more than merely entertaining, they're useful. The success of a mobile APP can be measured by how effectively it uses gestures.

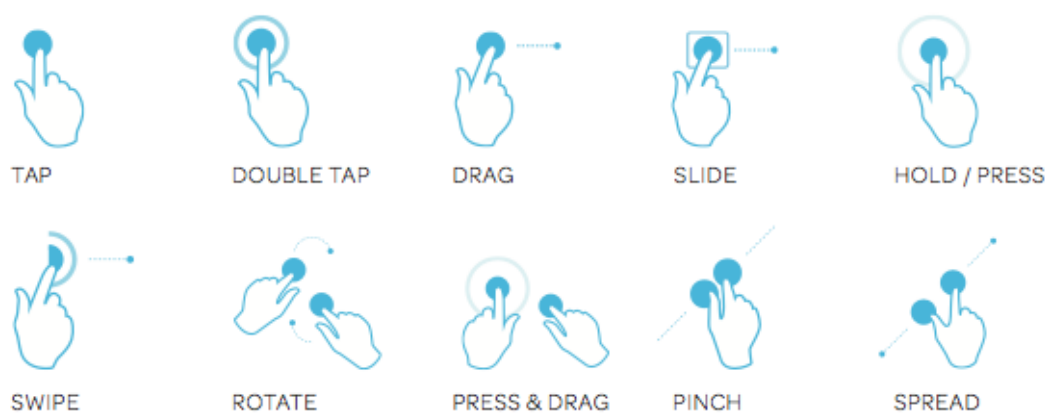


Figure 19 – More common mobile gestures

Having this as basis, gestures like tap, for instance, of selecting a coupon, double tap, for zoom in/ zoom out of a product or insertion of a product on a list, and swipes for rollbacks, refresh and for example navigation on promotional catalogs were also normalized.

Something customers always demand is feedback. Expecting something to happen when performing an action in an APP, is where animations enter. A simple change of color on a button shows that the button was pressed. It is a simple action but is extremely important, and we should not forget that less sometimes is more. Thus, every time a user presses an element an animation should be activated. The choice fell in a single light glint, a simple animation that at the same time gives back feedback to the users and life to the application.

The layout is something very peculiar on an APP, which turns it more difficult to normalize. However, the context of its thinking should be the same, simple and clean, without elements that might mislead the user and without too much unnecessary information. Something that can be normalized is the top bar of the application, which should always be present with an icon that identifies the APP in question, and with specific search area that should be easily identified by the users, something like is shown on the figure 20, below.



Figure 20 – Top navigation bar

This navigation bar enables navigation through an information hierarchy. It might help the management of screen contents by enabling the navigation among different views. When a user navigates to a new hierarchy level, two distinct things might happen, a bar title can be displayed, if that is the intention or a back button should appear in the left top corner, which can be labelled with the title of the previous level of information. Avoid massing a navigation bar with too much additional controls that will not bring any value and its look should be maintained consistent throughout all the APP screens.

According to google material design guidelines (Google Inc., 2015) “A button clearly communicates what action will occur when the user touches it”. It might consist of text, an icon, or both, designed in accordance with the APP color theme. It was defined that buttons call to action should be raised buttons, a typical rectangular button that animates when pressed and should be displayed in red, if it is related to a main action, or light grey when it is a secondary one. Its location in APP depends on its importance and on its logical sequence and should be left to decide upon the context of a particular app. Also buttons should occupy almost all the screen length, to ease the interact with it and prevent the so called “Fat fingers” difficulty of interaction. It is important not to forget to label the button correctly, according to the action for which it was conceived, the choice of the right words for the action it’s extremely important because it enhances user experience. Figure 21, below illustrates this type of buttons.



Figure 21 – Example of Call to Action buttons

Every app needs to communicate with its user. A good strategy to achieve this is by the usage of icons. There are two types of icons: APP icon and Bar icons also called system icons.

The APP icon is the one you click to open the APP on your mobile device, it is your product icon, they are an important part your brand acknowledge and they are unique, engaging and memorable.

On the other hand system icons represent commands of common tasks and are normally displayed on task bars. Its design should be simple, modern, intuitive and friendly. Icons should be displayed in a frontal view and their design should provoke a real recall on the user instead of recognition of an action. Shapes should be bold and geometric and they should be followed by an explanatory text related to the icon, this text might be placed down the icon or to its left, depending on what it is his purpose of usage. Figure 22, below shows a list of icons that can be used across different APPs and that area based on this study.



Figure 22 – List of icons

Last but not the least, it is also possible to normalize the usage of keyboards, alphabetic numerical and the one personalized for emails.

This challenge was to create visual norms that synthesize basic principles of good design, reconciling them with innovative new possibilities, based on the analysis of trends and tests with real users.

As mobile is a quite new world, that will keep innovating for many years, the UX Book is intended to be a live document, that will be consistently updated.

The UI metrics presented on the document may be explored and used across different company APPs, although is crucial never to forget that each APP is different, which mean that these norms might have to be adapted to its particular context.

6 Conclusions and Future work

Mobile applications are not cheap. Every new update requires time and money, and in huge quantities. APP providers, like Sonae MC in this particular case, have a clear idea of what their APPs should be, however not always consider how the needs of their customers may diverge from this idea. As an outcome, valuable resources are being wasted on new features and rollouts that probably will not provide any value to the customer.

However, if your mind is set to directly ask customers what they would like to have in an APP, you can be certain that your development time and money is being spent in a good way and that each new feature will increase customer experience. Therefore, the best way to achieve this is to create a practicable product, a prototype and test it with real customers in a mobile focus group or one-on-one environment, obtaining crucial insight to realize if you are taking the right steps.

From a developer point of view, you have dozens of features on your roadmap that you're excited to one day get to. But don't fall into the trap of trying to do too much, too quickly. Having less sometimes means more. This APP service paradigm highlights the need to collect mobile feedback and to give customers voice allowing you to decide which of your proposed features are most important to them in the context of your APP.

Once equipped with this knowledge, begin to prioritize milestones based on what will add most customer satisfaction. You'll also be able to determine which of your current features needs a little more "love" to meet or exceed customer needs.

So, if we're not sure about one thing, try to give the customer some credit, look at them as people, not users. Every one of your customers has their own preferences, their own unique way to use an APP, so give them that one little thing that will absolutely make them love an APP.

Another important part of the process is the utilization of surveys. Begin to collect valued information to segment customer base. This type of research is very important since it allows your in-APP communications to be personalized to the unique interests of a particular cluster of customers. This segmentation can also be used to target potential customer groups that match current customer personas and likely have common needs and interests that will draw this prospective user to an APP.

Launching a new update on a mobile APP might not be accepted as expected, the retention rate might fall. It might lead customers to change from an APP to another. Is it possible to know what's causing this strange behavior?

Once more, collecting mobile feedback might be the key to obtain an answer. Keep customers involved by constantly questioning them at crucial moments throughout their APP experience, for instance, after the usage of a new feature for the first time, this might help evaluate their experience with a product on-the-spot. This may allow to identify and fix any customer pain points early on and avoid possible negative reviews.

The reviews on the app store ratings page represent only a small fragment of an APP customer base. This portion tends to follow the extreme when it comes to their opinion towards an APP. These are people who either love or hate your APP. You are gathering only the feedback of the few screamers and not particular feedback on the representative force of your audience.

Providing customers with the tools needed to share their thoughts allows you to unlock a much more precise perspective of customer opinion.

The scope of the challenge embraced goes a bit further with a particular service necessity – the need that Sonae MC has to offer its customers an easy and homogeneous user experience through each mobile application inherent to *Continente* brand. Through the use of a customer testing experimentation it was possible to collect customer insights for this specification.

This project attempts to find the aspects that can be normalize in the process of APP development or re-structure through a customer based testing analysis with prototypes. One may conclude that through two distinct test types, one where the customer freely interacts with the APPs and makes comments and another one where he is presented with 2 different screens and have to reference the features of preference, it is possible to identify, analyze, get conclusions and obtain clear re-design improvements, that sincerely have to be consider, points that are nice to have, meaning that might increase value and others that will not add additional value to the customer.

Having collect data related with customer perception of the APP experience, graphical appeal and context on the moment of the service utilization, it was possible to verify that although many customers don't even have knowledge of the existence of the current APP, mainly because of the lack of attention to the communication provided, they believe that what the APP is already offering is extremely useful but still has potential to improve. This led to an essential understanding of opportunities and pain points. Even for core features, the card balance, coupons and promotional catalog checking, customers showed some concerns especially regarding navigation experience through the sliding menu and the general look and feel of the application, and what features they don't use, mainly the shopping list, search for products and stores, here showing concerns more related with the importance of the features and also the design the present. To overcome this, tests were conducted with real customers on to prototypes developed. After this analysis, a possible solution was proposed based on a navigation menu in bottom task bar, that we believe will increase drastically the user experience in APP, combined with the aggregation of core features such as Card and coupons from where outcomes the feature “coupons”, the implementation of a new feature called inbox, a communication channel with the brand, and a more animated and eye catching design.

With these studies and the proposal already mentioned, it was possible to elaborate a set of rules that will be aggregated on a document called UX Book, the main intend of the challenge embraced, that will help enhancing the customer experience by establish an easy and homogeneous journey of usage throughout all the mobile APPs the brand already launched and with the future ones to be launched. Things like layout structure, color patterns, menu selection, buttons size, color and typography will be present, among other UI and UX pertinent elements.

Keeping this document updated with these kind of elements is the future direction for this study, but never forgetting that trends are always changing and following people preferences and what is “sure” today may not be tomorrow, which means it will be live document and should keep being updated, based on gathered information.

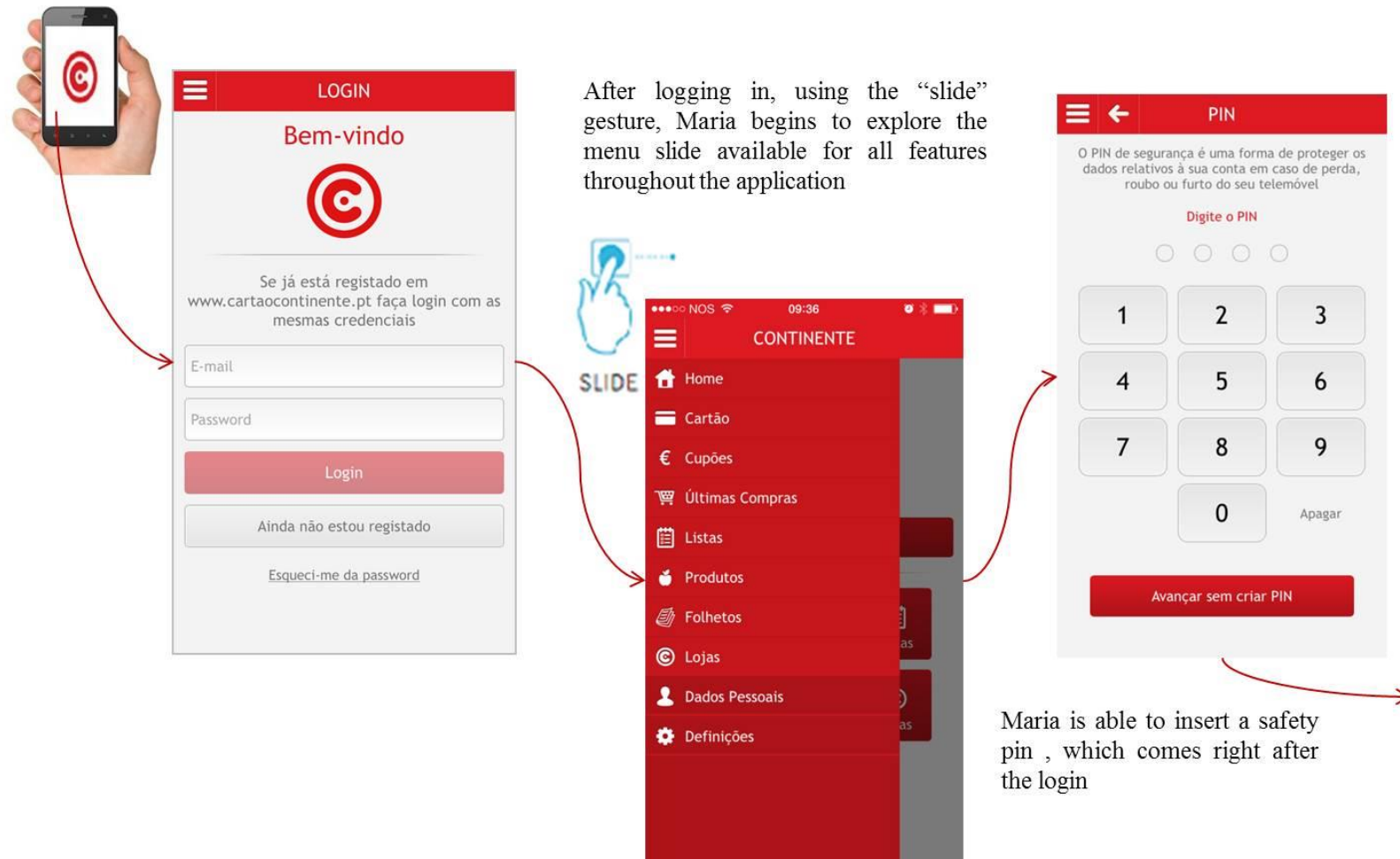
Future work directions aims essentially in progressively implement this consistency metrics in the entire mobile sector, assuring a simple and homogeneous experience of use not only on the existing APPs of Sonae MC but also on the future ones to be develop.

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ATTACHMENT A: Maria's customer journey in Continente APP





To gain access to the Easter promotional campaign, Maria chooses on the home page to click on “Folhetos”

The page opens with all the campaigns in place, Maria chooses the promotional catalog related to "Feira da Páscoa"



Maria can see the products in campaign, as a support in physical stores purchases or add to the online store cart



Using the slide menu, Maria search for products

Maria researches a product by name, but could have chosen to search by barcode scan or via the online promotional catalogs



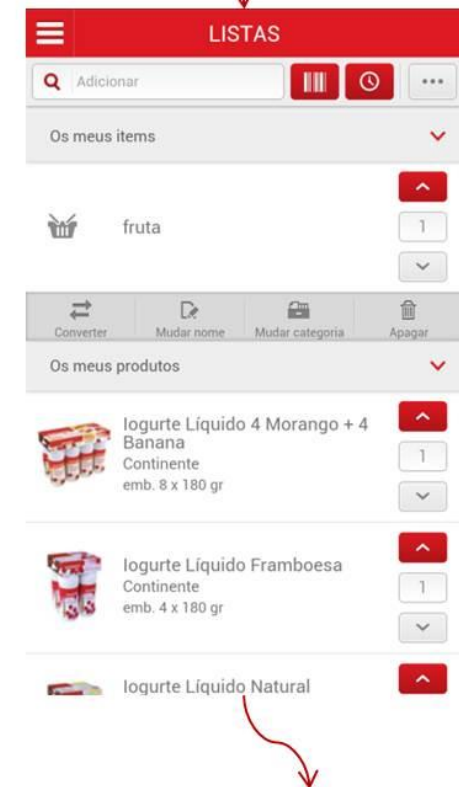
She clicks on the product and has access to its description, ingredients, usage tips and similar or related products suggestions





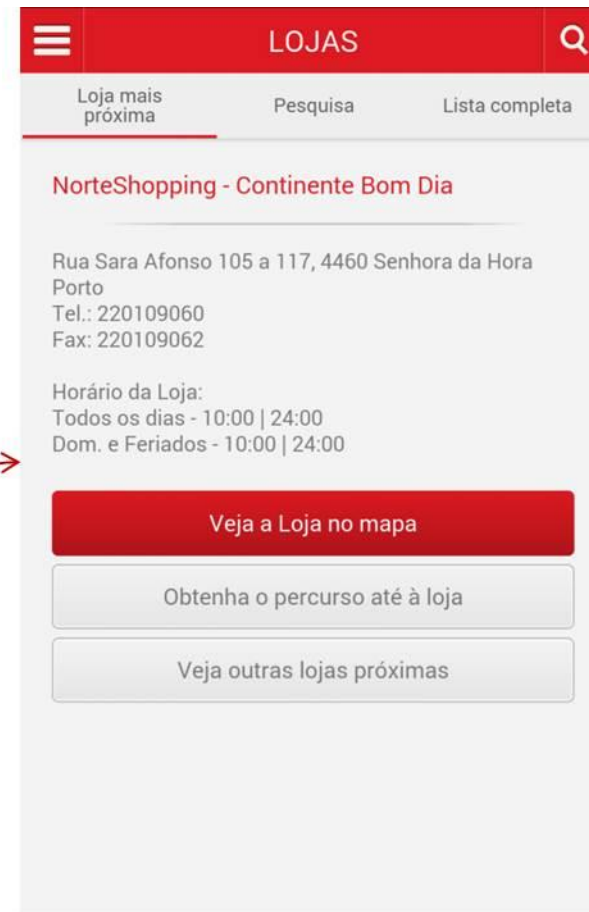
To help remembering her what she needs to buy, and taking advantage of the slide menu , Maria makes up a shopping list on APP Continente

Give a name to the list and start entering products, using the search option by product name



Maria makes up her shopping list knowing she can remove it at any time , increase product quantities and check its details

After she has completed her shopping list and before leaving home, Maria can check what is the nearest Continente store



After consulting where is the nearest store and verify that it is still open, Maria can go to the store and take advantage of remaining features



On the home page , Mary has access to the core functionalities of APP , in this case she chooses the option card, “cartão”

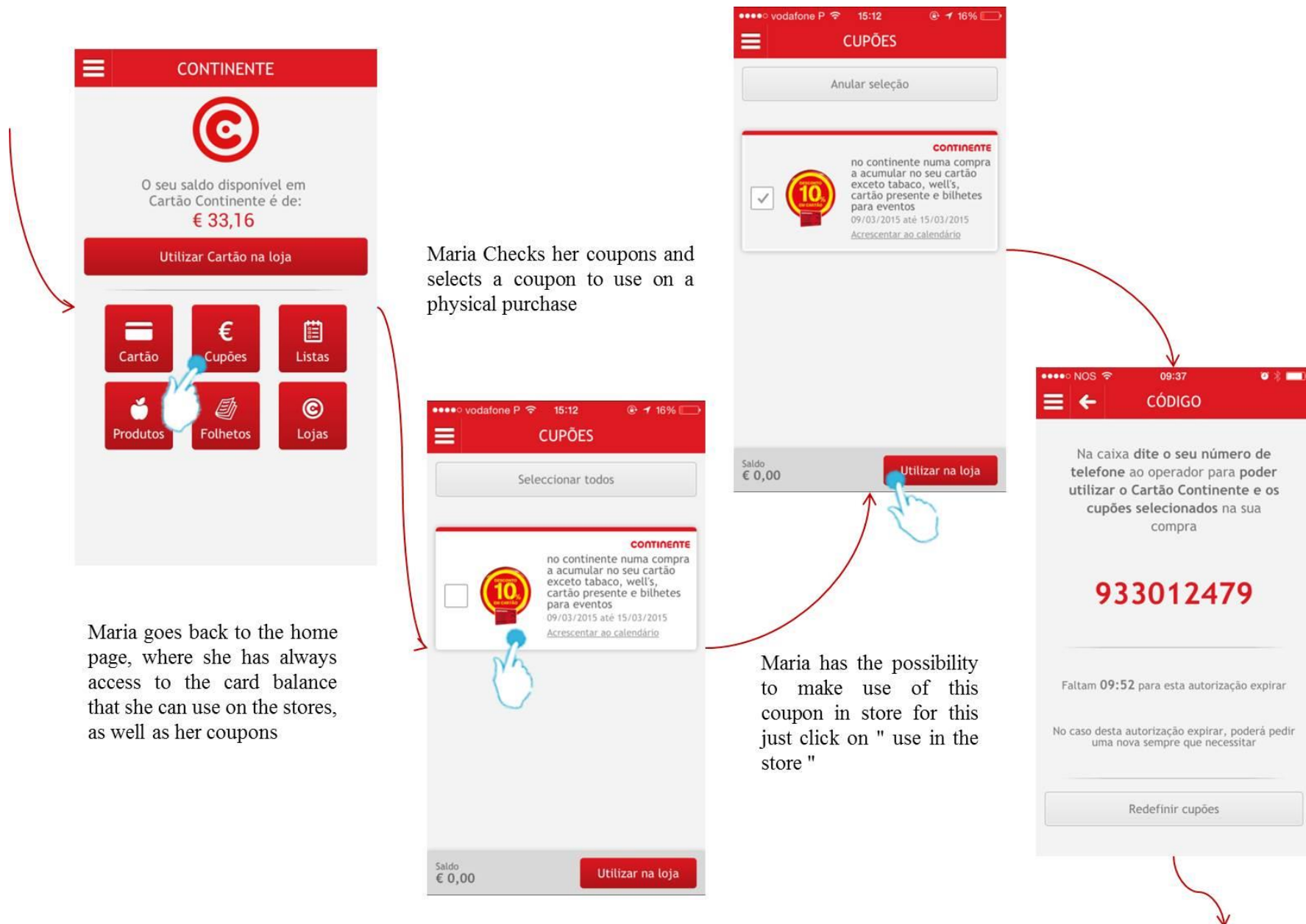
Then checks her transaction history from the last 30 days



Data	Valor
22/05/2014	€ 4,10
21/05/2014	€ 4,10
19/05/2014	€ 6,92
17/05/2014	€ 36,85
15/05/2014	€ 4,10
15/05/2014	€ 4,78
14/05/2014	€ 20,59



And she can even check the details of a specific purchase



ATTACHMENT B: Preliminary questionnaire

Questionário aplicação Continente – ação em loja

Idade: _____

Sexo: ☐ Feminino ☐ Masculino

Sistema Operativo: ☐ iOS ☐ Android



1 - Utiliza a aplicação *Continente*?

☐ Sim

☐ Não

Caso tenha respondido “sim” na questão anterior prosseguir com o questionário.

2 - Com que regularidade costuma utilizar a aplicação *Continente*?

☐ 1 vez por semana

☐ 2 a 5 vezes por semana

☐ 1 vez por mês

☐ 2 a 5 vezes por mês

☐ Mais de 5 vezes por mês

☐ Sempre que faça uma compra na loja

☐ Outro: _____

3 - Porque razões utiliza a aplicação?

☐ Consultar saldo em cartão *Continente*

☐ Consultar cupões disponíveis

☐ Utilizar cartão na loja

☐ Utilizar cupões na loja

☐ Consultar folhetos de campanhas

☐ Consultar as minhas últimas compras

☐ Localizar lojas *Continente*

☐ Consultar número do cartão *Continente*

☐ Outro: _____

4 - Como classificaria a navegação na aplicação *Continente*?

☐ Fácil de navegar

☐ Navegável

☐ Navegável após um periodo de “aprendizagem”

☐ Difícil de navegar

5 - Das funcionalidades que se seguem diga-nos:

	Nunca utilizou	Não sabia que existia	Não tem interesse utilizar	Utiliza casualmente	Utiliza regularmente	Não sei/ Não respondo
Listas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Últimas Compras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dúvidas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Definir Pin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Logout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pesquisa de produtos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pesquisa de lojas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Listagem de lojas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6 - Relativamente à interação a nível de menus, como classificaria a interação com o habitualmente denominado menu “Slide” ou “Hamburguer”?

- ☐ Fácil de navegar, claro e intuitivo
- ☐ Navegável
- ☐ Navegável após um período de “aprendizagem”
- ☐ Difícil de navegar e pouco intuitivo
- ☐ Difícil de navegar e pouco intuitivo, obriga-me sempre a voltar ao menu

7 - Na sua opinião acha adequado o design dos botões?

- ☐ Sim
- ☐ Não

Se respondeu “Não”, como acha que estes poderiam ser melhorados de forma a facilitar a interação com os mesmos?

8- Classifique a aplicação relativamente às seguintes características:

	Péssimo	Mau	Aceitável	Bom	Fantástico	Não sei/ Não respondo
Design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Esquema de cores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facilidade de interação	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utilidade da aplicação	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Experiência de utilização	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Satisfação global	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9 - Na sua opinião, o que poderia ser melhorado na aplicação *Continente*?

- ☐ Design da aplicação
- ☐ Navegação entre páginas
- ☐ Menus
- ☐ Otimizar ou inserir novas funcionalidades
- ☐ Destaques promocionais
- ☐ Comunicação
- ☐ Outros: _____

10 - Observações adicionais que ache relevante mencionar:

R: _____

ATTACHMENT C: Mock ups App Continente

Mock ups menu slide VS menu Task Bar



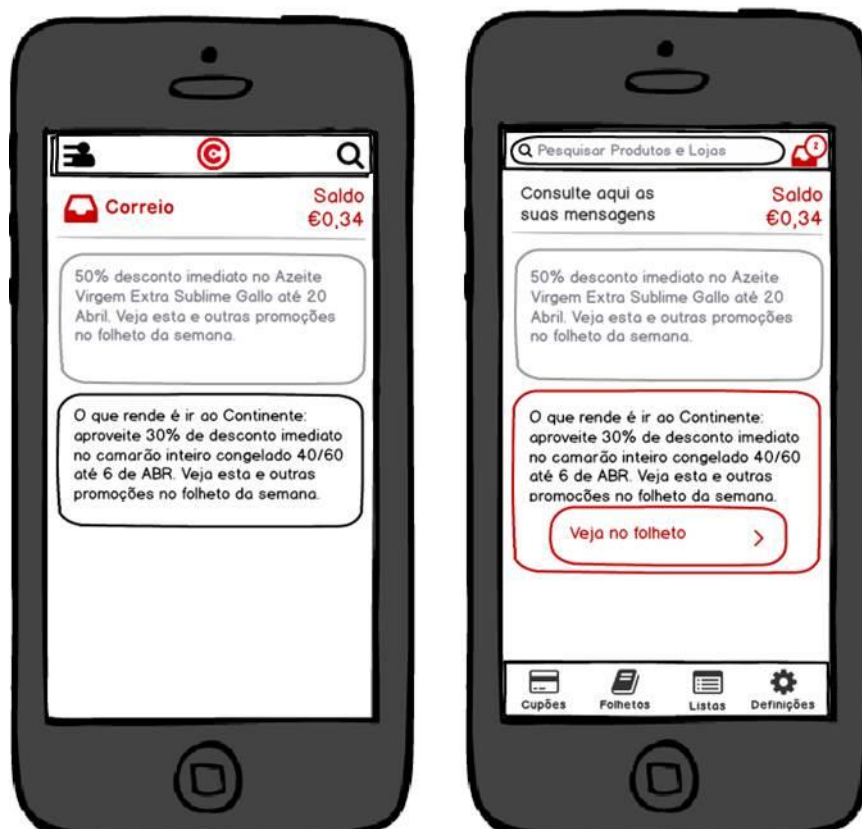
Mock ups Coupons, appears from the fusion between Card and Coupons



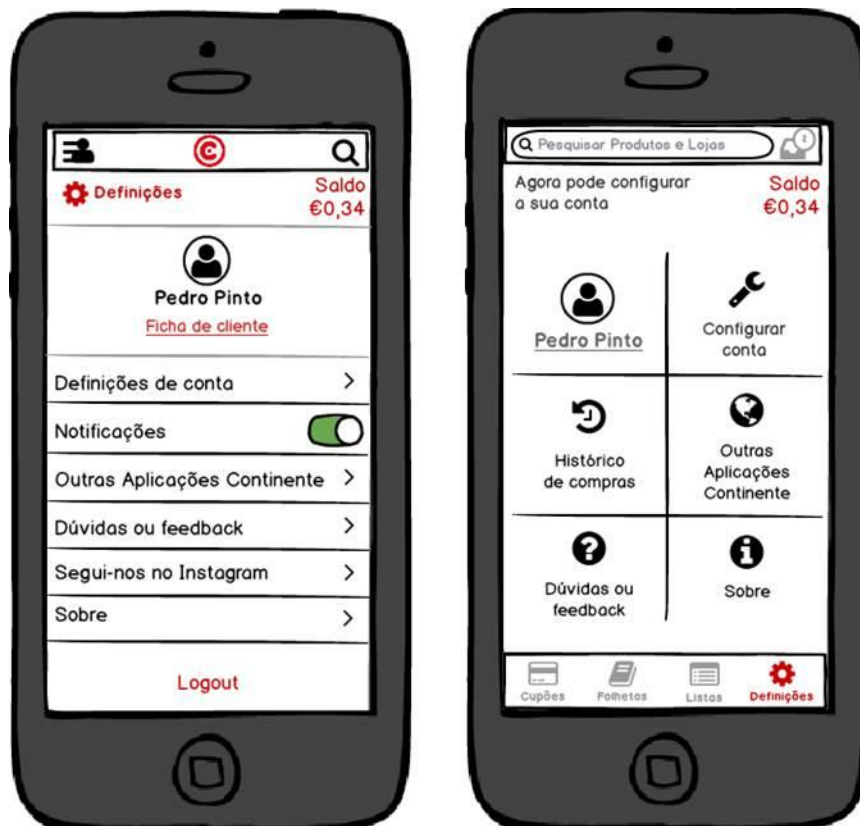
Mock ups promotional catalog



Mock ups in box mock



Mock ups settings



Mock ups purchase history



Mock ups stores



Mock ups filter



ATTACHMENT D: Script for the tests with clients

1. Introdução

Apresentação da moderadora e do participante.

Explicação de como decorrerá a sessão – Introdução + download e utilização de App

Pedido de autorização para gravação em áudio de toda a sessão

2. App Actual

Continente (*aquecimento*)

Antes de experimentar a aplicação em teste, gostaria que me falasse um pouco sobre a sua relação com a marca Continente, sei que é uma das lojas onde costuma fazer compras...vai com muita ou pouca frequência? O que mais gosta e menos gosta no Continente?

e relativamente à loja online do Continente...Costuma fazer compras no Continente Online? Porquê?

App Continente

Conhece a App do Continente para telemóvel?

SE SIM

Já utilizou ou utiliza a App Continente?

- O que acha da utilização? É ou não fácil de utilizar?
- Com que propósito utiliza a APP?
- Que funcionalidades mais utiliza?
- Com que frequência utiliza?
- Das seguintes funcionalidades (Listas, produtos, lojas, histórico de transações) quais costuma utilizar? Se não utiliza, o porquê de não utilizar? Porque não tem interesse utilizar? Porque não se apercebeu que existiam? Qual o problema com a utilização? Problema de conteúdo? Contexto? Design?

SE NÃO

Se não descarregou:

- Porque nunca descarregou? O que faltou para que tivesse descarregado e utilizasse esta aplicação? Falta de comunicação? Falta de divulgação?

Se descarregou:

- Já a descarregou? O que o/a levou a descarregar? E depois o que aconteceu?
 - Porque nunca chegou a utilizar a App? Ou porque deixou de utilizar?

3. Sessão com App

Explicar que vamos mostrar aplicações que estão em fase de desenvolvimento. Informar que não há formas certas ou erradas de navegar pela aplicação e de executar as tarefas, o objectivo é observar o comportamento para serem identificadas potenciais fraquezas e problemas das aplicações. Interessa perceber onde clica, que informações foi ver e a sua opinião sobre o que encontrou...

Pedir ao participante para falar alto à medida que for utilizando a aplicação – incentivar este comportamento.

Fazer download das 2 aplicações e começar.

Vamos então começar, veja à vontade a aplicação, vá para as diferentes páginas e secções e vá falando alto sobre o que está a fazer, onde clica e o que vê.

Começando por esta (Landing page) O que tem a dizer sobre esta página? Quais as suas primeiras impressões?

REGISTAR	QUAL	A	1ª	MS_LP	TB_LP	APLICAÇÃO :

Percurso e 1ªs impressões

O que fez/onde clicou – seguir o percurso realizado, anotando os comentários que são feitos em cada página.

(Confirmar que visitou todas as páginas – senão pedir para ir ver)

Landing Page

Menus

Cupões

Folhetos

Definições

Histórico de compras

Lojas

Pesquisa com e sem filtros

Correio

(Para as que não foram vistas)

- Não foi ver a....(referir área) porquê? Peço-lhe então que vá ver.
- Em **geral, gostou** desta aplicação? Porquê? O que tem que gostou e o que tem que não gostou/gostou menos?
- Até que ponto achou fácil ou difícil de usar? Porquê?

Para utilizadores da App Actual:

- Comparando com a que utiliza atualmente...qual **prefere**? O que esta **tem de melhor ou de pior**?

VAMOS AGORA VER A OUTRA APLICAÇÃO:

Percurso e 1^{as} impressões

O que fez/onde clicou – seguir o percurso realizado, anotando os comentários que são feitos em cada página.

(Confirmar que visitou todas as páginas – senão pedir para ir ver)

Landing Page

Menus

Cupões

Folhetos

Definições

Histórico de compras

Lojas

Pesquisa com e sem filtros

Correio

(Para as que não foram vistas)

- Não foi ver a....(referir área) porquê? Peço-lhe então que vá ver.
- Em geral, gostou desta aplicação? Porquê? O que tem que **gostou** e o que tem que **não gostou/gostou menos**?
- Até que ponto achou **fácil ou difícil de usar**? Porquê?

Para utilizadores da App Actual:

- Comparando com a que utiliza atualmente ...qual **prefere**? O que esta **tem de melhor ou de pior**?

Comparativo

- Agora que já experimentou as **duas aplicações, qual preferiu em geral**? Se tivesse que optar **por ter uma no seu telemóvel qual escolhia**? Porquê?

O que **gostou mais nessa**? E **o que gostou menos na outra**?

Principais diferenças de uma para a outra?

- Se tivesse que falar com as pessoas que desenvolveram estas aplicações o que lhes dizia **para melhorarem (pedir para falar das duas aplicações)**?
Caso o cliente não saliente, questionar, design, estrutura das páginas, navegação, experiência proporcionada.

ANÁLISE DAS APPs

Vamos agora ver **em papel**, as páginas das aplicações que estive a consultar para falarmos um pouco melhor sobre cada uma, mas se lhe der mais jeito pode usar o seu telemóvel para mostrar/explicar algo.

Landing Page

MS_LP	TB_LP
<p>O que tem a dizer sobre esta página?</p> <p>O que tem de positivo/gosta?</p> <p>E o que tem de negativo/menos bom?</p> <p>O que se podia fazer para melhorar?</p>	<p>O que tem a dizer sobre esta página?</p> <p>O que tem de positivo/gosta?</p> <p>E o que tem de negativo/menos bom?</p> <p>O que se podia fazer para melhorar?</p>
<p>Comparando as duas páginas, qual prefere? Porquê?</p> <p>E estas imagens que se veem sobre promoções? O que tem a dizer? Gosta/não gosta, acha útil ou não? Acha que vai consultar? Tem a clara perceção onde executa o login? Gosta da comunicação que é feita (outras apps por exemplo)?</p> <p>Para utilizadores da <u>App Actual</u>:</p> <ul style="list-style-type: none"> ➤ Comparando com a que utiliza atualmente...acha que está melhor ou pior? Em quê/porquê? 	

Menus

MS_LP	TB_LP
<p>O que tem a dizer sobre esta página?</p> <p>O que tem de positivo/gosta?</p> <p>E o que tem de negativo/menos bom?</p> <p>O que se podia fazer para melhorar?</p>	<p>O que tem a dizer sobre esta página?</p> <p>O que tem de positivo/gosta?</p> <p>E o que tem de negativo/menos bom?</p> <p>O que se podia fazer para melhorar?</p>

Comparando as duas páginas, qual prefere? Porquê?

Que menu facilita a experiencia de utilização? Porque?

Para utilizadores da App Actual:

Comparando com a que utiliza actualmente ...acha que está melhor ou pior? Em quê/porquê?

Cupões

MS_LP	TB_LP
O que tem a dizer sobre esta página? O que tem de positivo/gosta? E o que tem de negativo/menos bom? O que se podia fazer para melhorar?	O que tem a dizer sobre esta página? O que tem de positivo/gosta? E o que tem de negativo/menos bom? O que se podia fazer para melhorar?

Comparando as duas páginas, qual prefere? Porquê?

Não sei se reparou (ou como reparou,) mas agora estão aqui juntos nesta página as informações sobre o cartão e os cupões – acha bem assim? Porquê?

E quanto a estas barras - “utilizar na loja” e “Selecionar todos” - acha bem assim? Em qual das aplicações gosta mais, qual deveria vir primeiro: “utilizar na loja” ou “selecionar todos”?

Para utilizadores da App Actual:

Comparando com a que utiliza atualmente ...acha que está melhor ou pior? Em quê/porquê?

Folhetos

MS_LP	TB_LP
O que tem a dizer sobre esta página? O que tem de positivo/gosta? E o que tem de negativo/menos bom?	O que tem a dizer sobre esta página? O que tem de positivo/gosta? E o que tem de negativo/menos bom?

O que se podia fazer para melhorar?	O que se podia fazer para melhorar?
<p>Comparando as duas páginas, qual prefere? Porquê?</p> <p>E está na mesma lógica das outras páginas ou sente que está diferente?</p> <p>Para utilizadores da <u>App Actual</u>:</p> <p>Comparando com a que utiliza actualmente ...acha que está melhor ou pior? Em quê/porquê?</p>	

Definições

<p>MS_LP</p> <p>O que tem a dizer sobre esta página? O que tem de positivo/gosta? E o que tem de negativo/menos bom? O que se podia fazer para melhorar?</p>	<p>TB_LP</p> <p>O que tem a dizer sobre esta página? O que tem de positivo/gosta? E o que tem de negativo/menos bom? O que se podia fazer para melhorar?</p>
<p>Comparando as duas páginas, qual prefere? Porquê?</p> <p>Das duas estruturas apresentadas qual prefere? O Que gostaria de poder fazer com as definições da sua conta?</p> <p>Para utilizadores da <u>App Actual</u>:</p> <p>Comparando com a que utiliza atualmente ...acha que está melhor ou pior? Em quê/porquê?</p>	

Histórico de compras

<p>MS_LP</p> <p>O que tem a dizer sobre esta página? O que tem de positivo/gosta? E o que tem de negativo/menos bom?</p>	<p>TB_LP</p> <p>O que tem a dizer sobre esta página? O que tem de positivo/gosta? E o que tem de negativo/menos bom?</p>
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O que se podia fazer para melhorar?	O que se podia fazer para melhorar?
<p>Comparando as duas páginas, qual prefere? Porquê?</p> <p>O histórico das compras é uma informação interessante? Porquê? Para que utiliza essa informação?</p> <p>Na aplicação atual não aparecem os logotipos das lojas como aqui (Continente e Well's), prefere assim? Isto fará com que consulte mais esta secção ou se tivesse o total sem discriminar a loja era igual? Se faz sentido ter os descontos acumulados? Se tem interesse em saber quanto já ganhou em cartão e quanto falta para acumular mais saldo?</p> <p>Para utilizadores da <u>App Actual</u>:</p> <p>Comparando com a que utiliza atualmente ...acha que está melhor ou pior? Em quê/porquê?</p>	

Lojas

<p>MS_LP</p> <p>O que tem a dizer sobre esta página? O que tem de positivo/gosta? E o que tem de negativo/menos bom? O que se podia fazer para melhorar?</p>	<p>TB_LP</p> <p>O que tem a dizer sobre esta página? O que tem de positivo/gosta? E o que tem de negativo/menos bom? O que se podia fazer para melhorar?</p>
<p>Comparando as duas páginas, qual prefere? Porquê?</p> <p>Nesta aplicação (TB_LP) quando se quer ver as lojas clica-se no item "lojas" do menu e mostra sempre a loja mais perto e depois se quiser vai pesquisar outras, na outra tem que se ir pesquisar e procura-se a loja que se quer.</p> <p>Qual prefere? Porquê? Perceber se o cliente utilizará mais as lojas sabendo que lhe oferecemos mais informação referente a estas, como por exemplo os serviços disponíveis em loja.</p> <p>Para utilizadores da <u>App Actual</u>:</p> <p>Comparando com a que utiliza actualmente ...acha que está melhor ou pior? Em</p>	

quê/porquê?

Pesquisa com e sem filtros

MS_LP	TB_LP
<p>O que tem a dizer sobre esta página?</p> <p>O que tem de positivo/gosta?</p> <p>E o que tem de negativo/menos bom?</p> <p>O que se podia fazer para melhorar?</p>	<p>O que tem a dizer sobre esta página?</p> <p>O que tem de positivo/gosta?</p> <p>E o que tem de negativo/menos bom?</p> <p>O que se podia fazer para melhorar?</p>
<p>Comparando as duas páginas, qual prefere? Porquê?</p> <p>Que forma de pesquisa prefere?</p> <p>Para utilizadores da <u>App Actual</u>:</p> <p>Comparando com a que utiliza actualmente ...acha que está melhor ou pior? Em quê/porquê?</p>	

Correio

MS_LP	TB_LP
<p>O que tem a dizer sobre esta página?</p> <p>O que tem de positivo/gosta?</p> <p>E o que tem de negativo/menos bom?</p> <p>O que se podia fazer para melhorar?</p>	<p>O que tem a dizer sobre esta página?</p> <p>O que tem de positivo/gosta?</p> <p>E o que tem de negativo/menos bom?</p> <p>O que se podia fazer para melhorar?</p>
<p>Comparando as duas páginas, qual prefere? Porquê?</p> <p>Considera que é importante ter esta caixa de correio do Continente? Pensa que irá consultar esta caixa de correio? Para quê/porquê?</p> <p>Para utilizadores da <u>App Actual</u>:</p> <p>Comparando com a que utiliza actualmente ...acha que está melhor ou pior? Em quê/porquê?</p>	

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Nota: nesta fase de A/B testing (uma página MS vs uma página TB) questionar design das páginas, a forma como os botões são apresentados, o esquema de cores, a disposição dos elementos visuais nas páginas (estruturação), os ícones utilizados, são claros e intuitivos? Os títulos das páginas. A pertinência de ter sempre o saldo disponível no top da página. O tipo de linguagem utilizada? Se lhe parece adequada.

Agradecer e terminar

ATTACHMENT E: UX Book

Landing Page Utilizador não está loggado na APP



O que pode ser normalizado?

Ecrã que surge quando o utilizador não se encontra “loggado” na APP. A Barra de identidade (topo da página) deve estar presente em todos os ecrãs da APP, deve ser vermelha, apresentar o logo da marca e não deve ter mais de dois ícones de funções, um em cada uma das extremidades. Também a barra presente no fundo do ecrã (task bar menu) deve estar sempre presente e não deve passar dos 5 ícones de funções. Salva-se que a escolha do menu deve estar ligada com o contexto da aplicação e com a quantidade de funcionalidades oferecidas. No caso de isto se verificar deve-se optar por um menu mais estruturado, menu slide.

Este ecrã tem como foco a comunicação com o cliente, sendo assim deve apresentar banners de promoções/ folhetos, que podem ser apresentados estáticos como neste ecrã ou serem rotativos. A comunicação deve ser feita de forma clara e perceptível, com no texto de “login” aqui apresentado.

A comunicação de outras APPs existentes é algo de extrema importância para a empresa logo esta implementação deve ser um caso a considerar em cada desenvolvimento.

Depois de se “loggar” o cliente deve deixar de ter acesso a esta página.

Cupões surge da fusão entre cartão e cupões, assumindo o papel de “Landing Page” da APP



O que pode ser normalizado

Ecrã de cupões que agrega as funções do saldo do cartão com os cupões e que permite a sua seleção e utilização em loja. Barra de informação com o título da página e/ou comunicação direta (“micro tip”) deve estar presente em toda a APP. Botões devem seguir este tamanho, de forma a facilitar a interação, posicionamento lógico e cor vermelha para botões call-to-action core e cinza para botões call-to-action complementares. Texto dos botões devem estar centralizado e começar com letra maiúscula. Cor de letra branca. Visto de seleção de cupões deve ser a cor vermelha. Ícones claros e relacionados com a função a que se referem, fazendo-se acompanhar de uma legenda que no caso do menu deve estar por baixo do respetivo ícone. Quando selecionados, os ícones devem ter uma animação de mudança de cor, passando de uma cor neutra (tons de cinza) para o cor da marca (vermelho), como se pode verificar nas imagens. Por uma questão de ênfase o saldo em cartão deve ser apresentado no topo, ao centro e a vermelho.

Folhetos e Listas

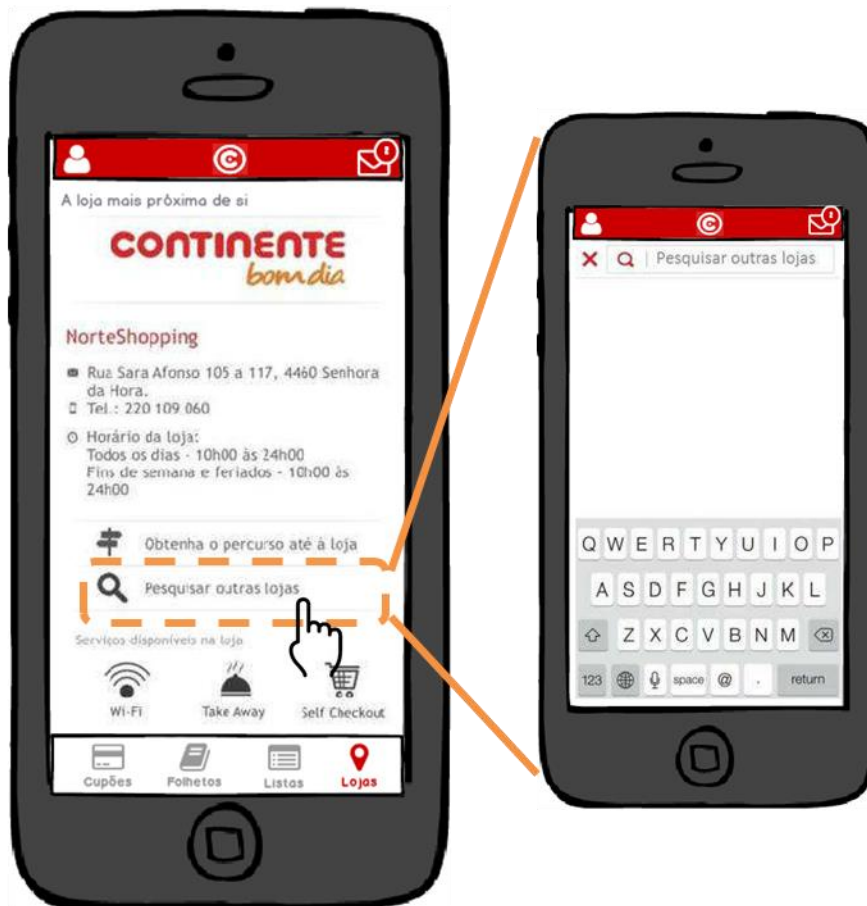


O que pode ser normalizado

Ecrã de Folhetos (à esq). Banners ao centro, com um contorno a cinza. Ao serem clicados devem ter uma animação de sombra e direcionar para os catálogos promocionais.

Ao clicar no botão das listas redirecionar para a APP das listas (imagem da direita)., esta deve ter uma opção de “voltar” para a APP continente, posicionada na barra de topo como demonstra a imagem.

Lojas surge a loja mais próxima com possibilidade de pesquisa de outras lojas



O que pode ser normalizado

Ecrã de lojas, apresenta sempre a loja mais próxima mediante o serviço de localização.

Imagem no topo do ecrã ao centro com a insígnia da marca a que se refere.

Nome da loja a vermelho alinhado à esquerda fazendo-se acompanhar dos respetivos detalhes da loja com ícones.

Ícones que sejam puramente informativos devem apresentar cores nos tons de cinza.

No caso de termos botões um a seguir ao outro como esta representado na imagem da esquerda, os botões devem estar separados por linhas e terem um ícone à esquerda do texto.

Campo de pesquisa deve ter o texto da pesquisa a que se refere, como mostra a imagem da direita.

Conta área pessoal do utilizador



O que pode ser normalizado

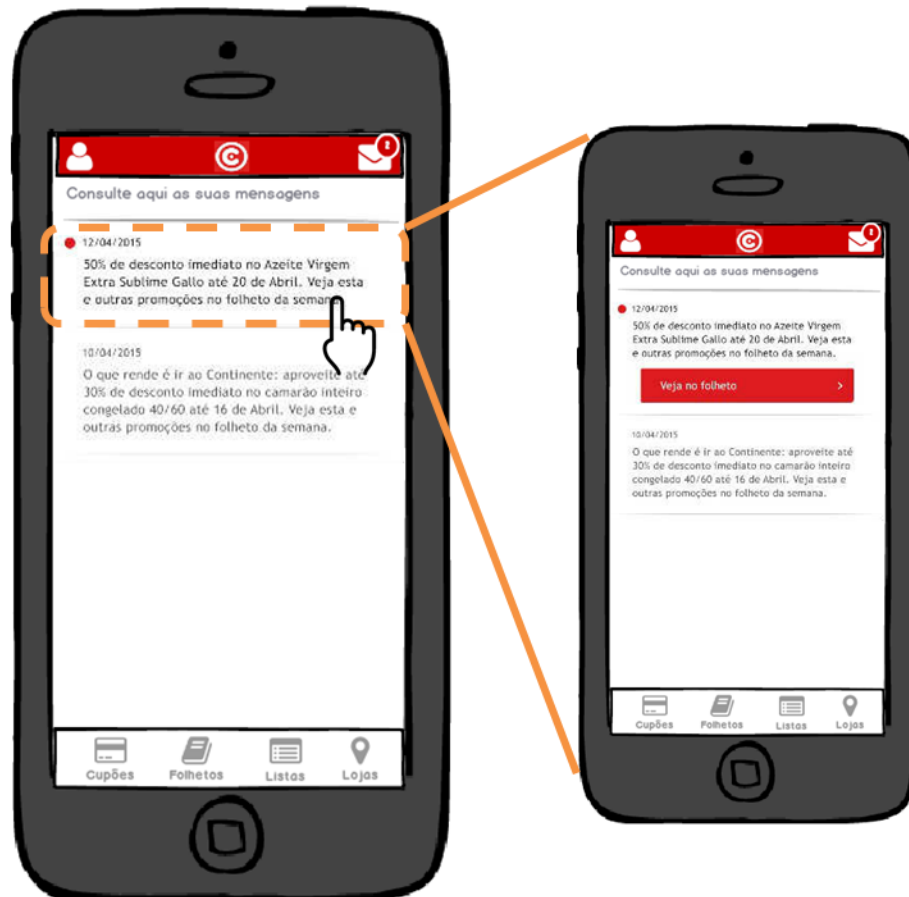
Maior personalização das definições de conta, com a introdução de "avatar" e do nome do utilizador.

Este tipo de função deve apresentar um menu em lista. Cada item da lista deve ter um seta que dê a entender que tem outro nível de informação.

Página de sub nível deve ter título e ser acompanhado de uma opção de voltar para a lista, ver imagem da direita.

Ícone de conta (extremidade esquerda da barra de topo) deve ser diferente quando a função esta ativa.

Correio onde se pode guardar toda a comunicação direta com o cliente



O que pode ser normalizado

Uma vez que há um maior aumento na comunicação com os clientes há a necessidade de ter um sitio onde essa comunicação seja armazenada.

Ícone de mensagem deve alterar quando função está ativa.

Feedback numérico deve constar sempre que o utilizador tenha mensagens por ler. No corpo da mensagem, se esta ainda não foi lida deve aparecer um ponto vermelho seguido da data e só depois a mensagem por baixo.

Ao clicar numa mensagem deve aparecer um botão vermelho com uma ação referente à mensagem, ver imagem da direita.